

EDUCATIONAL MILESTONES OF DYSLEXIA

FIELD HEARING
OF THE
COMMITTEE ON HEALTH, EDUCATION,
LABOR, AND PENSIONS
UNITED STATES SENATE
ONE HUNDRED FOURTEENTH CONGRESS
FIRST SESSION
ON
EXAMINING EDUCATIONAL MILESTONES, FOCUSING ON DYSLEXIA

OCTOBER 13, 2015 (Baton Rouge, LA)

Printed for the use of the Committee on Health, Education, Labor, and Pensions



Available via the World Wide Web: <http://www.gpo.gov/fdsys/>

U.S. GOVERNMENT PUBLISHING OFFICE

97-274 PDF

WASHINGTON : 2017

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
Fax: (202) 512-2104 Mail: Stop IDCC, Washington, DC 20402-0001

COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS

LAMAR ALEXANDER, Tennessee, *Chairman*

MICHAEL B. ENZI, Wyoming
RICHARD BURR, North Carolina
JOHNNY ISAKSON, Georgia
RAND PAUL, Kentucky
SUSAN COLLINS, Maine
LISA MURKOWSKI, Alaska
MARK KIRK, Illinois
TIM SCOTT, South Carolina
ORRIN G. HATCH, Utah
PAT ROBERTS, Kansas
BILL CASSIDY, M.D., Louisiana

PATTY MURRAY, Washington
BARBARA A. MIKULSKI, Maryland
BERNARD SANDERS (I), Vermont
ROBERT P. CASEY, JR., Pennsylvania
AL FRANKEN, Minnesota
MICHAEL F. BENNET, Colorado
SHELDON WHITEHOUSE, Rhode Island
TAMMY BALDWIN, Wisconsin
CHRISTOPHER S. MURPHY, Connecticut
ELIZABETH WARREN, Massachusetts

DAVID P. CLEARY, *Republican Staff Director*
EVAN SCHATZ, *Minority Staff Director*
JOHN RIGHTER, *Minority Deputy Staff Director*

C O N T E N T S

STATEMENTS

TUESDAY, OCTOBER 13, 2015

Page

COMMITTEE MEMBERS

Cassidy, Hon. Bill, M.D., a U.S. Senator from the State of Louisiana	1
--	---

WITNESSES

Shaywitz, Bennett A., M.D., Chief of Pediatric Neurology and Co-Director of the Yale Center for Dyslexia and Creativity, Yale University School of Medicine, New Haven, CT	4
Prepared statement	5
Shaywitz, Sally E., M.D., Audrey G. Ratner Professor in Learning Develop- ment and Co-Director of the Yale Center for Dyslexia and Creativity, Yale University School of Medicine, New Haven, CT	8
Prepared statement	11
Montgomery, Rev. Derrius M., Associate Minister, Greater King David Bap- tist Church, Baton Rouge, LA	18
Prepared statement	19
Trapp, Allyce, Student, Louisiana State University, Baton Rouge, LA	19
Prepared statement	21
Law, Margaret, CALT, Dyslexia & 504 Coordinator, Central Community Schools, Central, LA	22
Prepared statement	23

(III)

EDUCATIONAL MILESTONES OF DYSLEXIA

TUESDAY, OCTOBER 13, 2015

U.S. SENATE,
COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS,
Baton Rouge, LA

The committee met, pursuant to notice, at 3:12 p.m., in Dalton Woods Auditorium, Energy Coast and Environment Building at Louisiana State University, Nicholson Drive Extension, Hon. Bill Cassidy, M.D., presiding.

Present: Senator Cassidy.

OPENING STATEMENT OF SENATOR CASSIDY

Senator CASSIDY. This is actually a Senate committee hearing, and this is the protocol and format by which we will abide.

We have a third panelist. I apologize for beginning late, but our third panelist is running late. We now know he's nearby, so we'll go ahead and start, and when he arrives, he will be able to join.

This morning we are having a hearing titled "Educational Milestones of Dyslexia" that will highlight the importance of early identification of students with dyslexia, how high-stakes testing affects such students, and the need for appropriate accommodations.

I will make an opening statement, then introduce our panel. Each panelist will have 5 minutes. That light right there which you cannot see but hopefully they can, the green light is go, the yellow means you have 1 minute left, and the red light means wrap it up or else I'm going to wrap you.

[Laughter.]

After our witness testimony, we will begin with a round of questioning.

First, thank you all for being here. I see Joe from the school board. Thank you for being here. There are other educators here. My cousin is in the audience, Sophie. Again, I thank you all for being here.

I'm pleased to host this hearing to discuss the issue of dyslexia—an issue important to me as a parent and as a Senator.

Hi, Derrius. Welcome.

My hope is to bring greater awareness and understanding to dyslexia to help drive new Federal policies and to create resources to help students identified as dyslexic. The goal of the hearing is to show the importance of the identification, how high-stakes testing affects such dyslexic students, and the need for providing appropriate accommodations for dyslexics.

First the definition. Dyslexia is an unexpected difficulty in reading highlighted by a gap between an individual's intelligence and

their reading level, the bright child that cannot read. Or, as I was speaking to someone in the audience, the bright adult who cannot read.

An NIH study recently found that the prevalence rate of dyslexia is nearly 20 percent affecting Americans, but it's international, from all walks of life, Members of Congress, our staff, our members, thousands of constituents, 20 percent of us, and in this room probably more than 20 percent.

A couple of years ago my youngest daughter was diagnosed with dyslexia, so my wife and I set out to find out as much as we could and were amazed at how much is known and yet not incorporated into public policy. It is maddening. A recent GAO report found that many students with learning and other disabilities, including dyslexia, are not receiving accommodations such as extended testing time, which is required by the Americans with Disabilities Act when they take high-stakes testing such as the SAT, GRE, LSAT, or U.S. medical licensing exams and others. This is unacceptable, and by working together we can make sure that those with learning disabilities receive their proper and legally required accommodations.

For those with money, you can get that accommodation. If your child has dyslexia and you can afford \$10,000 to \$50,000 in tuition, your child can have that accommodation. For most families, that is not an option, and the question is whether in a typical public school dyslexics are mainstreamed. Mainstreaming, since there is a scientific base curriculum which is just for dyslexics, mainstreaming quite likely means they will not receive the remediation they need.

I applaud the schools and educators who have embraced science by providing students with the proper educational environment and curriculum that enables them to thrive personally and academically. Proper support at every level can make all the difference for a student struggling with a learning disability.

Let me brag a little bit on Louisiana. I think there are maybe three charter schools in the Nation—I only know for sure two—that specialize for children with dyslexia, and those two are in Louisiana. The first is the Max Charter School in Thibodaux, and then the other is the Louisiana Key Academy here in Baton Rouge. Full disclosure, my wife helped start that charter school, and there are some LA Key Academy board members here. Aside from being proud of my wife, I more importantly think that it's a good thing which extends access to that scientific curriculum to those who ordinarily would never be able to afford it. We need more of this.

There is much work to be done in raising the awareness about dyslexia and making important policy changes that create opportunities for all dyslexics, but we cannot afford to ignore those who are challenged. In the House of Representatives, I started the congressional Dyslexia Caucus to raise awareness. Since moving to the Senate last week, joining with Senator Barbara Mikulski of Maryland, we passed a bipartisan resolution which calls upon "Congress, schools, and State and local educational agencies to recognize the significant educational implications of dyslexia that must be addressed" and which designated October 2015 as National Dyslexia

Awareness Month. I hope this resolution is the first of many steps in the right direction.

Despite great strides, we still have much to learn about dyslexia, and we have a great panel today to speak to us on that subject. Let me now introduce the witnesses. I will start with the two right there.

Drs. Sally and Bennett Shaywitz were to join us, but circumstances worked out that they could not. They are currently at Yale in Connecticut. I think you see that banner above Bennett's head. They will be joining us via video, obviously.

Sally, I will first speak to her, is the Audrey G. Ratner Professor in Learning Development at Yale University School of Medicine and co-director of the Yale Center for Dyslexia and Creativity. Dr. Shaywitz has authored more than 200 scientific articles and books, and together with her husband, Dr. Bennett Shaywitz, is the originator of the Sea of Strengths model of dyslexia. Dr. Shaywitz is also an elected member of the Institute of Medicine of the National Academy of Sciences. She received her Bachelor's degree from the City University and her medical degree from the Albert Einstein College of Medicine.

Dr. Bennett Shaywitz is the Charles and Henry Schwab Professor in Dyslexia and Learning Development and co-director of the Yale Center for Dyslexia and Creativity. He has devoted his career to better understanding and elucidating the neurobiological basis of reading and dyslexia to ensure that this new knowledge is translated into better care and treatment of children and adults who are dyslexic. Dr. Shaywitz has authored more than 300 scientific papers and has received many honors for his contributions. He currently serves on the Scientific Advisory Board of the March of Dimes and the National Vaccine Program Office of Safety Subcommittee. He received his Bachelor's degree from Washington University and his medical degree from Washington University School of Medicine.

Next is Reverend Montgomery. He is a nationally recognized educational advocate, entrepreneur, and social change influencer. Reverend Montgomery was born and raised in Louisiana, where he attended both Baton Rouge Community College and LSU, majored in marketing and a minor in business administration. He is currently enrolled in the New Orleans Theological Seminary. An ordained minister, Reverend Montgomery attends the Greater King David Church in Baton Rouge, serving as an associate minister.

Allyce Trapp, Ms. Trapp is a senior at LSU from Houma. She is majoring in mass communications and minoring in history and business administration. She is involved in several extra-curricular activities, including student government.

We're interested in hearing your perspective as someone with dyslexia who has been able to do so well in a university setting.

And last, Ms. Margaret Law. Margaret is currently the district dyslexia and 504 coordinator at Central Community Schools. She earned her Bachelor's degree from LSU and is a certified academic language therapist. Her teaching expertise spans from 1st through 12th grades in both self-contained classes and as an academic language therapist. She also provides multisensory-structured language services and has presented at conferences and workshops.

We are glad to have Margaret here to brief us on the needs of teachers who are vital to the success of students with dyslexia.

If I may suggest to you three, as I mentioned to you two earlier, you all may want to sit there as the Shaywitzes speak, because they will have slides, and I am actually going to reference those as I then ask you questions.

I think, Bennett, you went first earlier, so I will turn to you two to decide what to do next.

**STATEMENT OF BENNETT A. SHAYWITZ, M.D., CHIEF OF PEDI-
ATRIC NEUROLOGY AND CO-DIRECTOR OF THE YALE CEN-
TER FOR DYSLEXIA AND CREATIVITY, YALE UNIVERSITY
SCHOOL OF MEDICINE, NEW HAVEN, CT**

Dr. BENNETT SHAYWITZ. Thank you so much, Senator Cassidy. Welcome to all our other panel members.

What we'd like to do in the next few minutes is give you a sense of how dyslexia serves as an explanation and potential solution to our national epidemic of reading and school failure.

The problem, as Senator Cassidy outlined, is that there is really a national epidemic of reading and academic failure. Science has shown that dyslexia may be at the root of these reading difficulties, but yet schools are not using the scientific knowledge to address and remediate these problems. We think, and I think you would all agree, that schools really need to increase their awareness of dyslexia.

Here is data from the National Assessment of Educational Progress, the so-called Nation's report card, of Grade 4 reading, the most recent iteration, and you can see that about half of African American children, African American 4th graders, are not reading—are reading below what is considered basic reading levels compared to still a significant percentage, 21 percent, of white students.

I think this emphasizes that dyslexia is especially prevalent and unrecognized in children of color and children who are disadvantaged. In these children, reading difficulties are often written off to environmental issues or lack of ability. We believe that these can be addressed and remediated, but only if the child is identified as dyslexic.

Senator Cassidy mentioned the definition of dyslexia, and this is really the 21st century definition of dyslexia which has now been codified by Senator Cassidy and Senator Mikulski in the Cassidy-Mikulski Resolution in the Senate, and here dyslexia is defined as an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader. We now know that this is due to a difficulty in getting to the individual sounds of spoken language which affects the ability of an individual to speak, to read, spell, and often learn a second language.

Here is data that supports the unexpected nature of dyslexia. We have IQ along this line and reading along this line, and reading and IQ are dynamically linked. Sally calls them kissing cousins. IQ affects reading, reading affects IQ, and so on.

In dyslexic readers, in contrast, IQ and reading are very much separated. They don't seem to be talking to one another, and what it means is that in dyslexic readers you can be very smart and still

not read very well. This supports the unexpected nature of dyslexia.

Senator Cassidy mentioned that dyslexia is the most common of learning disabilities. In fact, it represents 80 to 90 percent of all children diagnosed as having a learning disability.

We know that dyslexia is universal. It affects all racial, ethnic, and social groups, and we know that it affects one in five children. That is 10 million children in our country. Every classroom has children who are struggling readers.

And we know the neural basis of dyslexia. Study after study—this is an illustration from one of our own studies showing the left side of the brain in typical readers and the left side of the brain in dyslexic readers. What we see is what we call the neural signature for dyslexia. That is, in typical readers, we see these three systems for reading, one in the front of the brain and two in the back of the brain. In dyslexic readers, we have the neural signature, and that is an inefficient functioning of those systems on the left side of the back of the brain.

So what we now know in dyslexia is there's not a knowledge gap. We have plenty of knowledge, but what we have is an action gap. Our goal, and I'm sure it is yours, is to align education with 21st century science.

[The prepared statement of Dr. Bennett Shaywitz follows:]

PREPARED STATEMENT OF BENNETT A. SHAYWITZ, M.D.

Good morning Senator Cassidy, fellow members of the panel and attendees. Thank you for the opportunity to speak with you about the science of dyslexia and share with you the tremendous scientific progress that has been made in dyslexia. In particular, we want to focus on dyslexia as an explanation and potential solution to the national epidemic of reading/school failure.

My name is Bennett Shaywitz, M.D., I am a physician-scientist and the Charles and Helen Schwab Professor in Dyslexia and Learning Development and co-director of the Yale Center for Dyslexia & Creativity at the Yale University School of Medicine. Both a child neurologist and neuroscientist I have been a leader in applying functional magnetic resonance imaging (fMRI) to understand the neurobiology of reading and dyslexia in children and adults. These studies identify a neural signature for dyslexia, making a previously hidden disability visible, and for the first time demonstrate the brain basis for the lack of fluency in dyslexia. Our most recent studies focus on differences in brain connectivity between dyslexic and typical reading children and adults and studies in progress use fMRI to investigate attentional mechanisms in reading and dyslexia.

The author of over 300 scientific papers, my honors include election to membership in the National Academy of Medicine of the National Academy of Sciences and recipient of the Distinguished Alumnus Award from Washington University. I currently serve on the boards of the Park Century School and the Westmark School. I previously served on the Institute of Medicine Immunization Safety Review Committee, on the National Vaccine Program Safety Subcommittee and on the Scientific Advisory Board of the March of Dimes. I have been selected annually for *Best Doctors in America* and *America's Top Doctors*.

As you will hear, in dyslexia, science has moved forward at a rapid pace so that we now possess the data to reliably define dyslexia, to know its prevalence, its cognitive basis, its symptoms and remarkably, where it lives in the brain and evidence-based interventions which can turn a sad, struggling child into not only a good reader, but one who sees herself as a student with self esteem and a fulfilling future.

THE PROBLEM

Overwhelming evidence indicates that we are in the midst of a national epidemic of reading/academic failure. **Accumulating scientific evidence demonstrates that dyslexia both may be at the root of the reading difficulties noted and provide a potential solution to this unfortunate epidemic.** The difficulty is that although the evidence is there, schools do not appear to be aware of and/or

using this scientific knowledge to remediate the highly prevalent epidemic of reading failure. It is imperative that schools must increase their awareness of dyslexia.

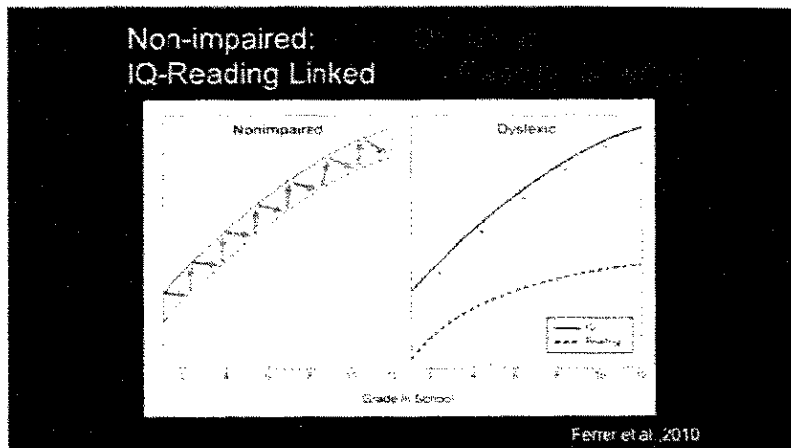
The most recent data from the National Assessment of Educational Progress (NAEP, 2013) demonstrate that African American students are especially impacted by this epidemic of reading failure. For example, fully half (50 percent) of African American boys and girls are reading below basic levels compared to 21 percent of white students. Sadly, these reading difficulties are not only highly prevalent in children of color and those who are disadvantaged, but they far too often go unrecognized and unaddressed. In these children their significant reading difficulties tend to be written off to environmental issues or lack of ability. What science has taught us is that these reading difficulties can be addressed and remediated, but *only* if the child is identified as dyslexic.

UNEXPECTED NATURE OF DYSLEXIA

Dr. Morgan's initial description of dyslexia over 100 years ago as an *unexpected* difficulty in reading has now been validated by empiric evidence. Our research group found that in typical readers, IQ and reading are dynamically linked, they track together over time and influence each other. In contrast, in dyslexic readers, reading and intelligence are not linked and develop more independently so that a child who is dyslexic can have a very high IQ and, *unexpectedly*, read at a much lower level.

This unexpected nature of dyslexia is now recognized in the 21st century definition of dyslexia found in Cassidy-Mikulski Senate resolution 275. Here dyslexia is:

(1) "Defined as an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader"; and



(2) Due to a difficulty in getting to the individual sounds of spoken language which affects the ability of an individual to speak, read, spell and often, learn a second language.

The Cassidy-Mikulski resolution not only recognizes the unexpected nature of dyslexia but also incorporates what 21st century science knows about the cognitive basis of dyslexia. Dyslexia is a difficulty within the language system, more specifically, the phonological component of language—it is not seeing words backward.

Data from laboratories around the world now answer the question—why do otherwise bright and motivated children struggle or even fail to learn to read? Almost invariably, they have a phonologic deficit. To explain, converging evidence over the past several decades supports the phonological basis of dyslexia. Phonological refers to the smaller pieces of language that make up a spoken word. To understand the implications of this theory, we compare what we know about spoken compared to written language. Spoken language is natural and does not have to be taught—everyone speaks. Reading is artificial and must be taught. The key in learning to read is that the letters have to be linked to something that has inherent meaning—the sounds of spoken language. To read, the beginning reader must come to recognize that the letters and letter strings represent the sounds of spoken language. She has

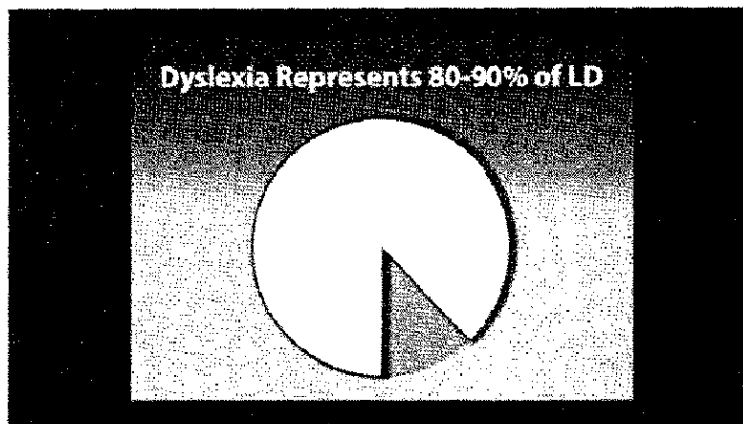
to develop the awareness that spoken words can be pulled apart into their basic elements, phonemes, and that the letters in a written word represent these sounds. Children and adults who are dyslexic struggle to pull apart the spoken word and, as a result, cannot isolate each sound and attach it to its letter. Results from large and well-studied populations of dyslexic children confirm that in young children as well as adolescents a deficit in phonology represents the most specific and robust correlate of dyslexia.

DYSLEXIA IS SPECIFIC; LEARNING DISABILITIES ARE GENERAL

Dyslexia is the most common and most carefully studied of the learning disabilities, affecting 80 percent to 90 percent of all individuals identified as learning disabled. Of the learning disabilities, dyslexia is also the best characterized and the oldest. In fact, the first description of dyslexia preceded the first mention of learning disability by over 60 years—dyslexia was first reported by British physician, Dr. Pringle Morgan, in 1896, describing Percy F.,

“He has always been a bright and intelligent boy, quick at games, and in no way inferior to others of his age. His great difficulty has been, and is now, his inability to learn to read.”

A description that characterizes the boys and girls, men and women, I continue to see to this day. In contrast, the term learning disabilities was first used only in 1962.



Dyslexia differs markedly from all other learning disabilities. Dyslexia is very specific and scientifically validated: we know its prevalence, cognitive and neurobiological origins, symptoms, and effective, evidence-based interventions. Learning disabilities is a general term referring to a range of difficulties which have not yet been delineated or scientifically validated. Learning disabilities are comparable to what in medicine are referred to as “infectious” diseases, while dyslexia is akin to being diagnosed with a strep throat—a highly specific disorder in which the causative agent and evidence-based treatment are both known and validated.

EPIDEMIOLOGY OF DYSLEXIA

Scientific studies in a range of disciplines provide epidemiologic, cognitive and neurobiological data to characterize dyslexia. Epidemiologic data from sample surveys, in which *each* individual is assessed, indicate that dyslexia is highly prevalent, affecting one in five—yes you read this correctly. It is not the stated prevalence often quoted. Why? The why is the reason we are here today—schools far too often fail to acknowledge, much less identify, students who are dyslexic. Consequently, schools will report low, but incorrect numbers of students affected. *If dyslexic children are not identified, they cannot be counted.*

Many believe that even this one in five estimate may be too low. For example, data from the 2013 National Assessment of Educational Progress (NAEP, the Nation’s Report Card) indicate that two in three students in 4th or 8th grade are not proficient readers. Among some groups of students the numbers are far worse. The

NAEP data show that four in five African American, Latino and Native American students are not proficient readers. Many would consider this to be an out-of-control epidemic of reading failure, and considering its negative consequences, a national crisis demanding action. Longitudinal studies, prospective and retrospective, indicate dyslexia is a persistent, chronic condition; it does not represent a “developmental lag.”

Sample surveys in which every subject has been individually assessed show relatively equal numbers of males and females affected. Studies based on school-based identification show a high male prevalence with accompanying data indicating that the often disruptive behaviors of the boys in the classroom play a strong role in bringing them to the attention of their teacher with subsequent referral. Girls who may be struggling readers, but who are sitting quietly in their seats, far too often fail to be identified.

Dyslexia has no known boundaries, it is universal, affecting virtually all geographic areas, and both alphabetic and logographic languages. For example, my book, *Overcoming Dyslexia*. (Knopf) has been translated, as expected, into alphabetic languages (Portuguese, Dutch, Croatian, etc.) but also, a surprise to me, logographic scripts including Japanese and Korean and most recently, Chinese. In addition, dyslexia occurs in every ethnic, race and socio-economic class.

NEURAL SIGNATURE OF DYSLEXIA

Converging evidence using functional magnetic resonance imaging (fMRI) from our own and laboratories around the world has identified three major neural systems for reading in the left hemisphere, one region, anterior, in Broca’s area and two regions posterior, one in the parieto-temporal (or Wernicke’s area), and another, in the occipito-temporal region, often referred to as the word form area. Furthermore, such fMRI studies indicate that in dyslexic readers, the posterior neural systems are functioning inefficiently, providing a *neural signature for dyslexia*. Critically, these posterior neural systems appear to be important in skilled, automatic reading and inefficient functioning in these neural systems suggest an explanation for the slow, effortful reading characterizing dyslexic readers. Recent studies of brain connectivity by us and others demonstrate that in dyslexic readers there is reduced connectivity to the posterior neural systems responsible for skilled, automatic reading.

IN DYSLEXIA: AN ACTION GAP

So what’s the problem? The good news is that our problem is a solvable one. Of course, we are always seeking new knowledge. In dyslexia there is sufficient high quality scientific knowledge to help and to turn around the lives of so many struggling children. In dyslexia, remarkably in America, in the year 2015, we have not a knowledge gap but an action gap. We have the knowledge but it is not being put into policy and practice and far too many children and adults, too, are suffering needlessly. There is an epidemic of reading failure that we have the scientific evidence to treat effectively and we are not acknowledging or implementing it. It is our hope that hearing the depth and extent of the scientific knowledge of dyslexia will alert policymakers to act and to act with a sense of urgency.

The really good news: Science is there for those who are dyslexic. We must align education with 21st century science. A major step in bringing science and education together is the Cassidy-Mikulski Senate Resolution 275 which provides the most up-to-date, universal, scientifically valid definition of dyslexia incorporating scientific advances in understanding dyslexia, especially, its unexpected nature, and represents a landmark in aligning science and education.

STATEMENT OF SALLY E. SHAYWITZ, M.D., AUDREY G. RATNER PROFESSOR IN LEARNING DEVELOPMENT AND CO-DIRECTOR OF THE YALE CENTER FOR DYSLEXIA AND CREATIVITY, YALE UNIVERSITY SCHOOL OF MEDICINE, NEW HAVEN, CT

Dr. SALLY SHAYWITZ. I will continue to give you a little bit of the background, the scientific background to dyslexia. Now that we have that, we have to focus on what are the action items, how do we act on that. A major question is what is dyslexia and what does dyslexia look like. I will just say very quickly, I don’t think the people in the room with you right now would respond this way, but far too many people, when you ask them what is dyslexia, they get

a puzzled look and say, “Oh yes, that’s when you read or see letters backwards.”

No.

Senator Cassidy mentioned our conceptual model of dyslexia as a sea of strengths, and here you can see what we envision is an encapsulated weakness in decoding and later on in fluent reading, but that encapsulated weakness is surrounded by a sea of strengths in higher level cognitive functioning, critical thinking, reasoning, problem-solving.

You have this paradox. You have the weakness and the strengths. The goal is to identify the weakness and remediate it, but also to identify the strengths and allow students and others access to these strengths, and that is most typically accomplished through accommodation.

This is very important. We have come to a stage of science in dyslexia where we have a pretty good idea of the origin of the difficulties, and that is the individual who is dyslexic has difficulty getting to the sounds of spoken language. That tells us what to look for.

What are the symptoms of dyslexia? They’re not sort of random. They make sense in light of what science has taught us about dyslexia. If you have difficulty getting to the sounds of spoken language, you will have symptoms of difficulty with spoken language; very often, of word retrieval. The person, the child and the adults know what they want to say and the problem isn’t at a higher level but actually at a lower level in actually uttering the word.

People who are dyslexic have trouble associating the letters with the sounds that represent the letters, affecting initially accurate reading and over time fluent reading, which is the ability to read not only accurately but rapidly, automatically, and with good comprehension.

It also affects spelling, and also the ability—if you’ve had difficulty learning your basic primary spoken language, you can almost predict that that individual will have difficulty learning a second language, a foreign language.

Here we have the science and the knowledge, but yet it’s not getting translated. It has stopped. So what are the barriers? It’s amazing. There are far too often schools who are unwilling to diagnose or even accept a diagnosis of dyslexia. It doesn’t make sense, but that’s the way it is. Or schools who will say I don’t believe in dyslexia. My response to that is, in the case of religion, you can choose whatever religion to believe in, but in the case of a proven entity, it’s not a case of I believe or don’t. It’s a fact, and in order to help our children, we have to utilize the science about dyslexia.

Also, I’m so happy that discussions of accommodations are also part of this hearing because very often schools fail to provide both evidence-based interventions and accommodations. It’s very important that, yes, children have difficulty in reading, but they have difficulty, as I mentioned, in spelling, in learning a foreign language, and these difficulties affect the whole child. A barrier is thinking in very narrow silos and not broadening our interest in the child and in the whole child.

This is very exciting. What you are seeing here are data that come from a paper that will appear in the Journal of Pediatrics

next month and is already online currently. You can see here the orange represents typical readers, the blue dyslexic readers, and here are their grades in school. You can see this is the achievement gap between typical and dyslexic readers.

Look over here. Look at that. This is 1st grade. Look at the size of that achievement gap. People say, oh, let's wait until 3d or 4th grade. That's too late. An achievement gap, and a very big one, is already present in 1st grade. We must screen for dyslexia, identify it, and then provide evidence-based effective treatments for it.

What do we do about it? Well, Dr. Bennett Shaywitz and I are really passionate about dyslexia. It turns out we all can visit schools, speak to many people, and do research. Our very firm conclusion is that it is in the best interest of a dyslexic child to attend a specialized school for dyslexia, and that's in keeping with having an early diagnosis, an early intervention, screening students for dyslexia early on.

A specialized school is where the climate is right, and by that I mean the atmosphere in the school, where everyone is on board. It's not just the reading interventionist that pulls that child out for 45 minutes twice a week, but it's every teacher. It's the principal. It's the PE teacher. Everyone is on board, and that becomes incredibly important.

Classes are small. Evidence-based methods are used. The teachers are knowledgeable, flexible and caring. This is really important. What you have in a specialized school is consistency in instructions across all classes, which is very different if a child is in a regular school and is pulled out for the 45 minutes or so. What happens when that child goes to his or her History class or Social Studies? The teachers typically have no idea what that child's reading is like. Whereas the reading may be one way during the reading instruction, it doesn't cross into other areas of instructions. In fact, teachers may be angry at the student: "Oh, I thought you knew this. Why can't you answer this question?"

What happens when you have a specialized school, the teachers form a team. They all communicate and support one another because they want to support the child. That's very rare in non-specialized schools.

Here is a wonderful school. It's the Windward School in New York, and they do wonderful work. The tuition is \$52,000 a year. I think it's good for those who can afford it, but think of how many people can't. What about middle-class children and disadvantaged children?

The question is—that's one model—are there any other models that work? I'll say there are, and right where you all are.

Here's a model that works, a specialized school for dyslexia, the Louisiana Key Academy, which is free to all dyslexic students. I see there the principal, Evelyn. I see teacher Dale Smith. I see my hero, Dr. Laura Cassidy, who not only started this school but works harder than almost anyone I know to make sure this school serves all children optimally. There's one of the students.

Hold on. We're trying to fix something. I'll try to go quickly. I'm from New York, so I can speak very quickly.

[Laughter.]

Accommodations basically are essential to dyslexic students based on scientific knowledge, the law, and ethics. Students who are dyslexic can often think at the highest levels, but they can't read fluently, quickly, or automatically. It's critical for tests to measure ability rather than disability, and accommodations level the playing field. It's especially important in high-stakes tests that they be appropriate for students who are dyslexic, or the results will be incorrect and misleading. I must say, the Cassidy office has been in the forefront of supporting students in terms of accommodations.

I'll finish in 2 minutes.

There's neurological evidence. I won't go into it now. The recommendation is schools shouldn't ignore it, and to create and support specialized schools like the state-of-the-art LKA (Louisiana Key Academy) model.

This is the last slide, to provide students with the knowledge about dyslexia. That's empowering, because it provides the student with self-understanding and self-awareness of what she or he has and what they need to do. It also provides students with a community to join. They know they're not alone. For the parent, teacher, and importantly the student, the knowledge that he or she is dyslexic brings with it the information that that student is not stupid or lazy.

Thank you.

[The prepared statement of Dr. Sally Shaywitz follows:]

PREPARED STATEMENT OF SALLY E. SHAYWITZ, M.D.

Good morning Senator Cassidy and fellow panel members. I too, thank you for the opportunity to speak with you about the science of dyslexia and share with you the tremendous scientific progress that has been made in dyslexia. Following Dr. Bennett Shaywitz, I, too, will focus my statement on dyslexia as an explanation and potential solution to the national epidemic of reading/school failure.

My name is Sally Shaywitz and I am a physician-scientist. The Audrey G. Ratner Professor in Learning Development and co-director of the Yale Center for Dyslexia & Creativity at the Yale University School of Medicine. I am a member of the National Academy of Medicine of the National Academy of Sciences, and have served on the Advisory Council of the National Institute of Neurological Diseases and Stroke (NINDS), the National Research Council Committee on Women in Science and Engineering, co-chaired the National Research Council Committee on Gender Differences in the Careers of Science, Engineering and Mathematics Faculty and have served on the congressionally mandated National Reading Panel and the Committee to Prevent Reading Difficulties in Young Children of the National Research Council. I am also the recipient of an Honorary Doctor of Science degree from Williams College.

I speak to you as a physician-scientist. As a physician, I have all too many memories of sitting by an ailing child's bedside, wishing so desperately that we had the knowledge to help that child. As a physician I know the power of science and how once new knowledge becomes available we act quickly, indeed, race to put that knowledge to good use. We want to close that knowledge gap and improve the lives of the affected children. When I sat on the Advisory Council of the National Institute of Neurological Disorders and Stroke, we constantly asked ourselves: how have we benefited mankind, how has our research improved the well-being of children and adults.

Given that there has been so much scientific progress, we must take definitive steps to translate this remarkable scientific progress into practice. A fundamental question we can now address is what is dyslexia and what does dyslexia look like.

THE PARADOX OF DYSLEXIA

Dyslexia is a paradox, the same slow reader is often a very fast and able thinker—giving rise to our conceptual Sea of Strengths model of dyslexia as a weakness

in getting to the sounds of spoken words surrounded by a sea of strengths in higher level thinking processes such as reasoning and problem solving. Reflecting this paradox are many eminent dyslexics—financier Charles Schwab, attorney David Boies, cardiac surgeon Dr. Toby Cosgrove, Hollywood agent Ari Emanuel, producer Brian Grazer and economist, Diane Swonk. On the other side of the coin are many who are not identified, and do not receive evidence-based instructions, continue to struggle to read and see themselves as failures. Sadly, these boys and girls have no knowledge of what their difficulty is or that it even has a name, have no self-understanding, come to view themselves as dumb or stupid, see themselves as not meant for school, suffer low self-esteem, often drop out of school with a loss to themselves, to their families and to society.

UNDERSTANDING THE ORIGIN OF THE DIFFICULTIES LEADS TO AN UNDERSTANDING OF THE SYMPTOMS OF DYSLEXIA

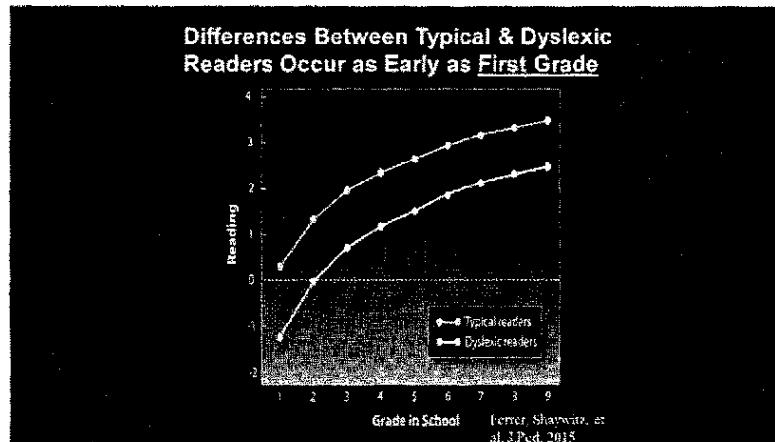
With the phonologic deficit recognized and validated, it is now possible to understand and to predict the symptoms emanating from this basic difficulty, which can be both observed and measured, resulting in an accurate diagnosis of dyslexia. Dyslexia is a language-based difficulty and impacts spoken language, for example, word retrieval difficulties: reading, initially impacting reading accuracy and then reading fluency, the ability to read not only accurately, but also rapidly and automatically with good understanding. Not being able to read automatically, dyslexic readers must read what I refer to as “manually,” requiring the output of large amounts of effort and consuming much of the individual’s attention. A dyslexic reader lacks fluency meaning that he reads slowly and with great effort, although he may understand the content at a high level. Importantly, the dyslexic’s vocabulary and comprehension may be quite high. Spelling is also problematic as is learning a foreign language—all reflected in the Cassidy-Mikulski Senate Resolution 275.

BARRIERS TO UTILIZING SCIENTIFIC KNOWLEDGE TO ENHANCE THE EDUCATION OF DYSLEXIC STUDENTS

Unfortunately, scientific knowledge is not being utilized by far too many schools. The major barriers include: schools that are unwilling to diagnose or accept a diagnosis of dyslexia and schools that don’t “believe” in dyslexia. As a consequence, students are hurt by the failure of these schools to provide evidence-based interventions and accommodations. In addition, the lack of understanding of dyslexia leads to a failure to address the needs of the whole child. As noted, dyslexia affects: spoken language, reading accuracy, reading fluency, the ability to read math problems, to spell and to learn a second or foreign language. These struggles particularly when not addressed lead to anxiety and at times depression and loss of self-esteem, often with negative life-long effects.

READING GAP ALREADY PRESENT BY FIRST GRADE AND PERSISTS

Scientific knowledge, too, has delineated the progression of reading development. Reading growth is most rapid early on, during the first few years of school and then plateaus. In a report to be published in November 2015, we report the results of a longitudinal study of reading from first grade to twelfth grade and beyond. We find that as early as first grade, compared with typical readers, dyslexic readers had lower reading scores and their trajectories over time never converge with those of typical readers. These data demonstrate that such differences are not so much a function of increasing disparities over time but instead because of differences already present in first grade between typical and dyslexic readers. We conclude that the achievement gap between typical and dyslexic readers is evident as early as first grade, and this gap persists into adolescence. These findings provide strong evidence and impetus for early identification of, and intervention for, young children at risk for dyslexia. Implementing effective reading programs as early as kindergarten or even preschool offers the potential to close the achievement gap.



NATIONAL READING PANEL AND TEACHING READING

Fortunately, thanks to congressional action there is now strong evidence of what treatment elements are effective in teaching children to read. In 1998 Congress mandated the formation of a National Reading Panel to investigate the teaching of reading. I was proud to serve on the panel which produced the Report of the National Reading Panel. As a result, today it is no longer acceptable to use reading programs lacking scientific evidence of efficacy: instead it should be mandatory to use programs that are evidence-based, proven to be effective in the same way that medications must be tested and proven to be effective before they can be approved by the FDA. Our children deserve no less. And yet, today, this powerful information is not being used in schools, children are not learning to read and giving up, and not reaching their full potential. We have what amounts to an educational emergency in the United States. Children are not learning to read with serious academic, economic and health consequences including, school drop-out, being half as likely to go on to college, significantly lower lifetime earnings, significantly higher unemployment, higher rates of mental health issues such as often incapacitating anxiety, and as reported in 2013, significantly higher mortality rates related to lack of a high school diploma. These harsh consequences harm not only the dyslexic individual but place our country at a competitive disadvantage.

EFFECTIVE READING INTERVENTION FOR DYSLEXIA

There is much known scientifically and clinically about dyslexia and its impact on children. Synthesizing that information brings with it the strong suggestion that a dyslexic child is best served, first by early diagnosis which should lead to early intervention, especially that there are now data indicating, as noted above, that the achievement gap is already present and large at first grade. The size of this gap makes it exceedingly difficult to overcome with time. It provides a strong impetus to identify and address dyslexia very early in the student's school career. Assessment for phonological skills early on and/or having the child's teacher complete a relatively short questionnaire, such as the Dyslexia Screening Measure (DSM) which is based on longitudinal data, can provide data with good sensitivity and specificity indicating a child's risk of being dyslexic.

Currently, dyslexic children are either not identified, and even if, identified provided with pull-out instructions of about 45 minutes several times a week. The child feels isolated and embarrassed. S/he is often teased and/or bullied, and returns to a class where s/he has missed the instructions other students have received. Most of his/her teachers have no idea of what dyslexia is, and believe it is reversing letters. This means that teachers in the child's other classes such as social studies, science or biology, math or literature are totally unprepared to understand or educate the dyslexic child. These educators have no or little idea of the student's reading level and how to best address the child's reading, writing, spelling and word retrieval difficulties. Points are taken off for mis-spellings in history, a student's dif-

faculty in reading the words in a math problem are mistakenly ascribed to lack of understanding of math principles and so it goes. It is critical that the dyslexic child is in a school where the entire faculty is on board and understands dyslexia and how best to address the needs of a child who is dyslexic.

Dyslexic students require frequent opportunities to interact with their instructor; this is only possible in small groups as noted by the Report of the National Reading Panel. In large groups, dyslexic students have little opportunity to interact with the instructor, perhaps once during a period, if that. This is totally insufficient and does not provide the opportunity for the instructions to take hold. Methods must be based on evidence and not anecdote or belief systems, e.g., "I know in my heart that this methods works. I believe in it." Teachers must be knowledgeable about dyslexia and flexible. Dyslexic students are not fluent readers, this means that they may know how to read one moment and then, a short while later, not be able to decipher the very same word. It is imperative that teachers understand the impact of lack of fluency on reading, and similarly, are aware that if a dyslexic student is called on to read aloud, it is often unbearably embarrassing or if she is asked a question, her word retrieval difficulties arising from her dyslexia may result in her not being able to retrieve the correct word—due not to a problem in higher level cognitive functioning or lack of knowledge but due to her inability to access and retrieve the sounds of the words that are needed for her to articulate the word correctly. Students are in a school during the day going to many classes: it is critical that the child's teachers are united and function as a knowing and caring team that is fully aware of where the child is in his/her reading, how s/he is being instructed and the effective approaches to supporting this student in each teacher's subject class and is aware of, and following, the student's progress carefully. This requires teachers to function as a team, that is, to be in constant contact with one another and there to be on-going consistency in instructions.

The most effective models that work for dyslexic students are specialized schools specifically for these students. There are a number of such specialized schools for dyslexic students nationally. Students attending such schools benefit, learn to read and succeed in their academic work and come to appreciate, too, that they are not stupid. However, what these independent schools have in common is high tuitions that many middle-class parents, and certainly not disadvantaged families, can afford. What is wonderful to see is a new model that has been developed, one exemplified by the Louisiana Key Academy (LKA) started by Dr. Laura Cassidy, which is *a free public charter school* that brings into the school and each and every classroom all the scientific knowledge now known about dyslexia, along with a deep understanding and concern for each student at the school. I have personally visited the school, spoken with teachers, students and parents and was elated to see how well the students are learning, how they now viewed themselves as learners rather than as school failures, and, perhaps, most importantly, how much pride and self-esteem they have developed. It is very powerful to be at a school where you are part of a community of dyslexic students who are bright and where you are no longer viewed as different, inferior and not part of the group. Given the terrible epidemic of reading and school failure, and the high prevalence of dyslexia of one in five, we must ensure that LKA is sustainable and strongly supported. This school has made an extraordinary difference for so many dyslexic students who were previously ignored, feared going to school and were on the path to academic, and sadly, life failure. The difference this school has made in these students' lives is breath-taking and life-affirming. This opportunity for a chance at success must be made available to every boy and girl who is dyslexic, especially those who are disadvantaged or African American. We, as a society, must do no less; having successful learners will not only benefit the student, but his family and community, and, indeed, the Nation. **The model of LKA, a free public charter school is a model that works, a school that provides the needed "all hands on board" climate and instructions to dyslexic students. Critically LKA addresses the needs of the whole child the entire day rather than the artificial belief that giving a child a package of instructions for a period a day will address the significant and on-going needs of a dyslexic child.**

ACCOMMODATIONS

Given that a student who is dyslexic has both a weakness and strengths, it is critical that, for example, tests, both in school and on high stakes standardized examinations and Common Core assessments actually measure the student's ability and not his disability. The dyslexic student may learn to read fairly accurately but hardly ever with fluency; he remains a slow reader albeit a quick thinker. These dyslexic students may know the answer to a test question, but as a result of their slow read-

ing never get to reach many questions or to finish the test, the student simply runs out of time. Or, she is so anxious about finishing the exam that she races through it and misses questions which, given the needed time, she would be able to answer correctly. Thus, it is critical that students who are dyslexic receive the accommodation of extra time; it is not a perk but a necessity if the result of the test is to reflect that student's knowledge. In adolescents and young adults applying for high-stakes standardized tests for college, graduate or professional schools, the Americans with Disability Amendment Act (ADAA) of 2008 is highly supportive of the need for accommodations for those with disabilities like dyslexia that impair a major life activity like reading. The ADAA regulations also state that students should receive accommodations even if they are doing well in school, it is not the outcome of their performance but rather what they have to do to achieve the outcome.

High school and college students with a history of childhood dyslexia often present a paradoxical picture; they may be similar to their unimpaired peers on measures of comprehension, but they continue to suffer from the phonologic deficit that makes reading less automatic, more effortful, and slow. Neurobiological data provide strong evidence for the necessity of extra time for readers with dyslexia. Functional MRI data demonstrate that in dyslexic readers the word-form area, the region supporting rapid reading, functions inefficiently. Readers compensate by developing anterior systems bilaterally and the right homolog of the left word-form area. Such compensation allows for more accurate reading, but it does not support fluent or rapid reading. For these readers with dyslexia, the provision of extra time is an essential accommodation, particularly on high stakes tests such as SAT, ACT and tests for professional schools such as LSAT, MCAT and GRE—and for the Common Core tests. The accommodation of extra time allows the student time to decode each word and to apply his unimpaired higher order cognitive and linguistic skills to the surrounding context to get at the meaning of words that he cannot entirely or rapidly decode. While readers who are dyslexic improve greatly with additional time, providing additional time to non-dyslexic readers results in very minimal or no improvement in scores.

A special word about the Common Core State standards (CCSS) and tests such as PARCC, which are designed to assess whether students are meeting the CCSS. **It can be stated unequivocally, that the CCSS and accompanying tests such as PARCC are totally inappropriate for students with dyslexia. Such tests are based on the mistaken belief that all students, including dyslexic students, will be fluent readers by the end of second grade and that all students should read at grade level and above, clearly an expectation that flies in the face of all that has been learned about the development of reading in dyslexic children.**

Furthermore, CCSS and PARCC are based on the belief that comprehension-focused reading instructions using “complex text” should be the basis of reading instructions, ignoring whether or not the student can actually read the words in the “complex text.” This has had serious implications for dyslexic students. For example, the PARCC test for third-grade students is more targeted to the reading level of students in fifth grade and focused on reading comprehension. This has had the pernicious effect of schools dropping all other instructions, including the much-needed decoding instruction, to focus almost exclusively on comprehension. In addition, it is well-known that multiple choice questions in the PARCC are inappropriate for students who are dyslexic. Common Core's overwhelming focus on comprehension may be appropriate for students in high school but is wholly inappropriate for children in very early grades, especially dyslexic students who are invariably still struggling with and working hard to master decoding.

Although providing extra time for reading is by far the most common accommodation for people with dyslexia, other helpful accommodations include allowing the use of computers for writing essay answers on tests, access to recorded books and text to voice software. Other helpful accommodations include providing access to syllabi and lecture notes, tutors to “talk through” and review the content of reading material, alternatives to multiple-choice tests (e.g., reports or projects), waivers of high-stakes oral exams, a separate, quiet room for taking tests, and a partial waiver of the foreign language requirement. Dyslexic students who have difficulty accessing the sound system of their primary language will, almost invariably, have difficulties learning a foreign language. Students with dyslexia most often have no difficulty with the mastery of high level courses. The problem lies in their lack of fluent, rapid reading so that it is the time necessary for them to read through the materials that is problematic. Many rigorous schools allow these students to take one course less during the school year and take this course during the summer. With such accommodations, many students with dyslexia are successfully completing studies in a range of disciplines, including science, law, medicine and education. It is accom-

modations such as these that are encouraging and allowing more students who are dyslexic to enter and to succeed in STEM fields.

SUMMARY AND IMPLICATIONS OF THE SCIENCE OF DYSLEXIA

Yes, dyslexic children can learn to read and must be taught to read. It is imperative that teachers and parents learn about the powerful science of dyslexia, know how to identify dyslexia early on and to provide a positive climate where the entire school faculty is on-board in understanding and teaching students who are dyslexic. This can only take place in specialized schools where dyslexic students are understood, taught by evidence-based methods and are part of a community that they are welcomed into, rather than being isolated. We must not give up on teaching dyslexic children and limit a child's future options. Education must, and can be, aligned with science. To best serve the dyslexic child, we must serve the whole child throughout the school day and not limit his education to a 45-minute pull-out once a day.

We must ensure that scientific knowledge is translated into policy and practice and that ignorance and injustice do not prevail. We know better, we must act better.

I cannot look into the face of one more child who has lost faith in himself and the world, I cannot look into the face of a child's father who is desperately trying to hold back tears; I cannot hear once again about how a school told a mother, "we do not believe in dyslexia."

As an iceberg is 90 percent underwater with only 10 percent visible; similarly, in dyslexia, we hear about the 10 percent who have made it. Let's not give up on the invisible 90 percent still underwater asking, indeed begging, to be helped.

I am optimistic, once Congress, educators and parents are aware of the strong science of dyslexia, educators will want to align their practices and policies with 21st century science. Congress, in particular, can do much to address the needs of dyslexic students, to transform struggling students who do not see themselves as learners into empowered learners who see themselves as having a positive future. First and foremost, it is critical that all recognize that dyslexia cuts across all boundaries—ethnic, racial, SES, gender, national and political. All including Republicans and Democrats must come together on this human issue; dyslexia is not, and should not, be used as a political issue. Recognizing and addressing dyslexia, the explanation and potential solution to our terrible epidemic of reading and academic failure is in the interest of the one in five who are dyslexic, their families and our Nation. I congratulate Senators Cassidy and Mikulski who have come together to sponsor the bipartisan Senate Resolution 275 that provides a 21st century definition of dyslexia and states, unequivocally, that dyslexia has significant educational implications. Isn't it time that the IDEA written first in 1974 joins the 21st century science and gives dyslexia the primacy it deserves, rather than being lost in the verbiage as an afterthought. Let's rise above political interests, acknowledge dyslexia and 21st century knowledge of dyslexia, including its prevalence, definition, identification, provision of not only evidence-based instructions but, critically, strong support for specialized schools for dyslexic students, schools whose climate of having everyone on-board and instructional methods allow dyslexic students to have their strengths, rather than their weaknesses characterize their future lives.

Schools must not be allowed to ignore or fail to recognize dyslexia. We must act now. This requires creating and supporting specialized schools for dyslexic students using the state-of-the-art LKA model. We must always keep in mind: **OUR CHILDREN CAN'T WAIT.**

For far too long, the word and the condition it represents, dyslexia, has been overlooked, not said and not used, much to the detriment of the millions of children who are dyslexic. Dyslexia is specific, highly relevant and carries with it explanatory meaning. Science provides its definition, epidemiology, cognitive basis, neurobiological basis, developmental progression, and long-term outcome.

Perhaps, most important of all, the greatest beneficiary of knowing who she or he is, is the dyslexic student him/herself. To know what you have has a name and explains so much of what you experience on a daily basis and lets you know that you are intelligent, even if you can't read quickly, is incredibly empowering. I have had the experience of telling so many children (and adults, too) that they are dyslexic and what that means. The absolute relief this provides can be life-changing, and indeed, life-saving. Knowledge that you are dyslexic provides the student with self-understanding and self-awareness of what s/he has and what s/he needs to do in order to succeed. Furthermore, such knowledge provides students with a community to join—for many, it is the very first time they know they are not alone. For his or her parent, teacher and importantly, the student, knowledge that s/he is dyslexic brings with it the information that the individual is not stupid or lazy.

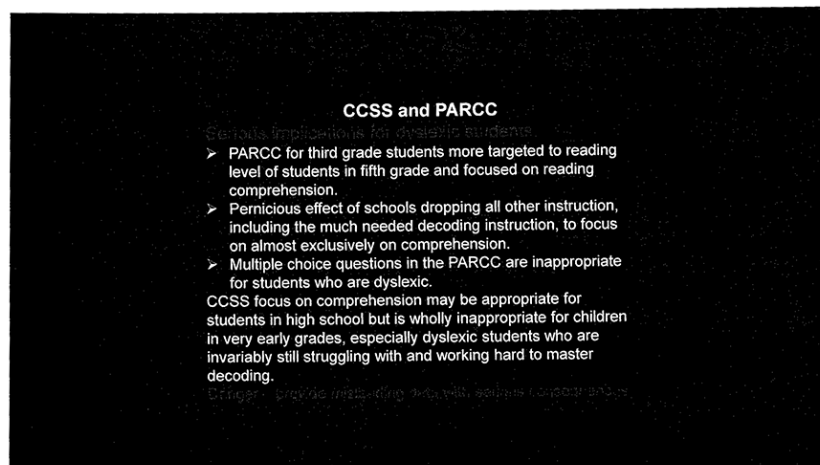
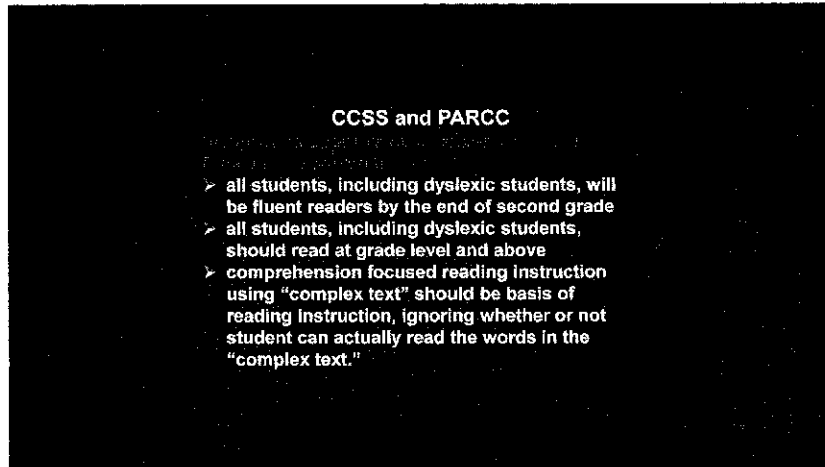
Top priority recommendation:

Given that dyslexia affects the whole child in every class throughout the school day it seems reasonable to strongly encourage the creation of specialized charter schools that focus solely on dyslexia. Recognizing the rapid growth in reading in the very first years of school and the already present gap by first grade the school should begin as early as possible, by kindergarten or first grade. The goal is to reach children at-risk for dyslexia early on when reading intervention can be maximally effective and before the students fall further and further behind. At such specialized charter schools, such as the Louisiana Key Academy, the entire educational team from principal to classroom teacher to physical education instructor understand dyslexia, it impact students in various situations and are on board to support the students throughout their day. Here, students learn and there is no bullying by students or frustration expressed by teachers who may not understand the impact of dyslexia. These schools can also serve as resources where teachers can come, spend time and learn about dyslexia, what it is and how it impacts a student and learn specific evidence-based methods for teaching reading to dyslexic students and how to best implement these methods.

Other Recommendations:

- Schools must not be allowed to ignore, fail to recognize or deny the reality or diagnosis of dyslexia.
- Schools, including teachers, principals and other administrators and parents should make every effort to use the word dyslexia since it has specific, highly relevant and explanatory meaning; science has provided its: definition; epidemiology; cognitive basis; neurobiological basis; developmental progression; and long-term outcome. For dyslexia, knowledge of its cognitive basis indicates what symptoms to look for so that symptoms of dyslexia in the classroom (and at home) are noted and acknowledged rather than as currently happens, ignored or overlooked. This greater awareness and understanding of dyslexia and its impact will benefit both the teacher and student both in the teaching of reading and in the climate and attitudes within the classroom.
- Using the word dyslexia provides a common language facilitating communication among teachers, clinicians, scientists and parents.
- For the student, the knowledge that he is dyslexic is empowering, providing the student with self-understanding and self-awareness of what he has and what he needs to do in order to succeed.
- For students, knowledge that they are dyslexic also provides a community to join—they know they are not alone.
- For the parent and teacher, and importantly the student, knowledge that he or she is dyslexic brings with it the information that the individual is not stupid or lazy.
- Critically important is that schools must use *evidence-based* programs that have proven efficacy; research-based simply indicates that there are theoretical suggestions but does not provide evidence that the program is, indeed, effective. Evidence-based programs are akin to the level of evidence the FDA requires before a medication can be approved for use. Many, many theoretical, research-based approaches, when tested in the field, prove to be ineffective. Our children's reading is too important to be left to theoretical, but unproven, practices and methods. We must replace anecdotal and common, but non-evidence-based practices, with those that are proven, that is, they are evidence-based.
- Professional development programs targeted for teachers must provide *evidence* that the *students* of the teachers using these programs actually improve in their reading performance. This is in contrast to some professional development programs which seem to improve teacher's understanding but not in a way that results in improvement in their student's reading performance.
- Schools of education must ensure that aspiring teachers are taught evidence-based methods to teach reading and have monitored experience demonstrating that they are effective in implementing these methods.
- Scientific evidence that reading growth is maximum in the very first few years of school and then plateaus together with new data indicating that the reading gap between typical and dyslexic readers is already present at first grade and persists means that students must receive evidence-based instructions at the start of their school experience and their progress carefully monitored. Waiting is harmful and not acceptable.

There is so much more to tell; for those who have questions and want to know more, visit the Yale Center for Dyslexia & Creativity website: dyslexia.yale.edu or look at my book, "Overcoming Dyslexia," which discusses the scientific basis of dyslexia and how to translate this knowledge into practice.



Senator CASSIDY. Derrius.

STATEMENT OF REV. DERRIUS M. MONTGOMERY, ASSOCIATE MINISTER, GREATER KING DAVID BAPTIST CHURCH, BATON ROUGE, LA

REV. MONTGOMERY. Again, my name is Derrius Montgomery. I am here on behalf of LA Key Academy. I serve as a board member. Can you all hear me?

Senator CASSIDY. You have to turn on the microphone, I believe.

REV. MONTGOMERY. Oh, much better.

Again, my name is Derrius Montgomery. I have been in the education fight for about 2 or 3 years now. I joined this fight as an advocate originally with Stand for Children. I learned some horrific data, that 71 percent of 4th graders, along with 78 percent of 8th graders, weren't able to read at grade level, and it frustrated me

because I remember being one of those, probably one of the 71 per cent of 4th graders that couldn't read.

Thanks to my parents moving to Atlanta, GA, where I attended a middle school called Floyd Middle School, I got access to resources that were not offered to me here in Louisiana. That's when I discovered I was dyslexic, when I moved to Atlanta.

Senator CASSIDY. Derrius, can you speak a little louder, please?

REV. MONTGOMERY. Can you hear me? OK.

When I realized that I was dyslexic, I didn't find out until I was an adult. When I looked at all the studies and I saw some of the main symptoms, the reading and the comprehension piece, that kind of disturbed me because I'm a grown man. I'm a father of three, a husband now, but I remember getting teased for simply not being able to comprehend and read at my grade level. I wouldn't really say that my teacher didn't care about me. I just believe maybe she didn't have the resources in our little town of Opelousas to actually identify those traits that could have probably given me the education career that I needed right here in Louisiana, but I had to go away.

When I think about other students, those who are right there in my community in the church that I serve, those kids can't just get up, pack up and go to another State to receive that quality of education.

When I learned of the Cassidy school, I quickly wanted to jump on board because this is something that I feel not only can be a partnership with our local school district here, but we get to educate other teachers across our State on what it really means to be dyslexic and how we can all work together to provide those tools to those teachers so that we don't have any more kids falling through the gap.

That's all I have as an intro.

[The prepared statement of Rev. Montgomery follows:]

PREPARED STATEMENT OF DERRIUS MONTGOMERY

By the 4th grade, It was obvious that I suffered with some type of learning disorder. From difficulty memorizing, to difficulty of spelling and reading, I remember being forced to feel for many, many years, like I wasn't trying hard enough. Since people who suffer with dyslexic have no outward visible signs of their difficulties, my parents and educators questioned the very existence of dyslexia.

It was not until the 6th grade at Floyd Middle School, in Mableton GA, where my 6th grade teacher would discover that I was indeed a very smart and highly motivated learner. But due to my lack of self-confidence and the overlooking of all the tell-tell signs of dyslexia, it was evident that I may have come up through a system that No. 1, did not understand the symptoms of dyslexia, so they couldn't provide the necessary accommodation or No. 2, my educators and school system did not care to provide the necessary accommodation.

Because of my 6th grade teacher's training, she was able to not only identify the symptoms of dyslexia, but also made a way for me to receive the proper accommodations needed to graduate high school, become a college graduate, then business owner and well-respected community leader.

Senator CASSIDY. Allyce.

STATEMENT OF ALLYCE TRAPP, STUDENT, LOUISIANA STATE UNIVERSITY, BATON ROUGE, LA

Ms. TRAPP. Hello. I'm Allyce Trapp, and I'm a senior here at LSU. It sounds like I was the exception in living in Houma, LA. I was diagnosed in 1st grade. My parents immediately noticed that

I was way behind all the students in my class. I wasn't reading as well. That graph they showed was perfect, a perfect example of the students in my class, they read something, they understood it. When I read it, it just went right out. I had no idea what I was looking at.

My parents were quick enough to catch it, have me diagnosed, and found out I was dyslexic in the 1st grade. In my school, when you are dyslexic or ADHD, you are put into the Project Read program in the 2d grade. From 2d grade through 5th grade you are put into this program, and they take you out of the classroom for your English and your reading and they do multi-sensory things with you, like work on your vocabulary words and making flash cards. I still do that in college. They just teach you a bunch of ways to study.

Senator CASSIDY. Allyce, can you pull that microphone up? People are listening online.

Ms. TRAPP. Oh, I'm so sorry.

Senator CASSIDY. Just a little bit closer.

Ms. TRAPP. OK. They told me different ways to study, and they went all the way back to the beginning with basic words like "it", "cat", "sat"—just things I should have learned in kindergarten but I didn't because I just couldn't, just couldn't retain it.

That's what Project Read did for me, and because I had that program, I caught up with everyone else in my grade. By the time I was in 5th grade and I was out of the Project Read program and put into the Resource program, I was caught up, and that's because it was caught early. And, yes, it does happen as early as 1st grade. They could have noticed it in kindergarten if they really wanted to, because I was that far behind that early.

I remember not learning how to tell time on a watch, like the actual watch, until I was in 8th grade; learning Spanish because I didn't learn that in 1st grade because it went in one ear and right out the other.

The accommodations, I can't stress enough that my life completely changed after having those accommodations. If I didn't have that, I wouldn't be at LSU. I would be in Houma doing God knows what. I wouldn't be in school, that's for sure. It completely changed my life because before that, I don't remember this because I was young. My mom said I'd come home, I would be discouraged, I had no motivation, low self-esteem. What kindergartener do you know who has low self-esteem?

It's because of dyslexia, because they see all the other students who are picking up everything, who are learning everything, and they're not. It's like, what's wrong with me? Why am I dumb? There's nothing wrong with the student, it's just that they have to learn a different way, and that's what these accommodations taught me, that I am just as smart as everyone else, I just have to learn a different way. That's what having all the accommodations through elementary school and high school, and now in college, gave me. I had extra time on the ACT, and I'm so thankful for that because if I didn't have that, I would not be at LSU, I would not have gotten that score that I needed.

I had unlimited test time. I could take each section as long as I wanted. I zipped through certain sections, but I took that math

section for 2 hours, and that got me here. I just need small, little things like that, got me where I needed to be.

Because I had a few teachers who really cared about me and really wanted the best for me, and had a few small accommodations and parents that cared about me and wanted to get me diagnosed, I'm here. I have a great future ahead of me. I'm planning to go get my Master's in Business Administration, something that wouldn't even be a concept if I hadn't been diagnosed, and it's all because I was caught early and I was given a few small accommodations early on.

I think if every student had that, they would all be fine. They would all be in college, they would all be productive, highly motivated, highly educated. They'd have the world at their feet. I think that's something that definitely needs to happen.

That's all for me.

[The prepared statement of Ms. Trapp follows:]

PREPARED STATEMENT OF ALLYCE TRAPP

Hello, my name is Allyce Trapp, and I am a senior at Louisiana State University. I cannot emphasize enough the importance of having academic accommodations throughout my life. Before being diagnosed with dyslexia, I struggled with academics in kindergarten and was beginning to fail the first grade. As a consequence, I suffered from low self-esteem and was frustrated with my inability to learn. Thankfully, my mother had me tested for a learning disability, and I was diagnosed with dyslexia in first grade and began Project Read and a program called Resource in second grade. Without this diagnosis, I would not have been able to enter these programs and get the help that I needed. I watched friends who were not tested and did not get help struggle throughout their school years, which is something that could have easily been avoided.

From that point on, I started to learn and retain what I was taught thanks to the teaching methods employed. Project Read started their students back at the beginning. For example, we went over the spelling of basic words like "it," "cat," "sat" and so on, all things I should have learned in kindergarten. Project Read took me out of the classroom and into a separate room with other students who struggled with learning disabilities. Project Read gave me a safe and comfortable environment to learn with other students like me. The teachers used a multisensory approach to learning such as tracing our vocabulary words in trays of sand and writing information on flashcards, which I still do today. This program gave me confidence in and out of the classroom and can be accredited with shaping the student I am today.

I continued Resource upon entering high school. The Resource program offered typed notes for my classes, a quiet room with teachers on hand for assistance and extra time allotted for exams. When I went to take the ACT, I was again offered extra time and was placed in a quiet classroom where I could work at my own speed. Because I had sufficient time to take this extremely important exam, I made the score I needed to get into LSU. Now at LSU, I am registered in Disability Services, which offers me similar accommodations to those I had in high school. Thanks to the skills that Project Read gave me, I personally do not need the accommodations granted to me in college that some students do very much need.

Project Read allowed me to achieve my early academic goals and helped me become a successful student. Without Project Read, I would most likely have lost my motivation to learn. Because I was diagnosed and helped early on in my life, I was able to grow and adapt to my disability, and I am now a successful and confident college student. I am graduating in May with a degree in Mass Communications and have plans to attend graduate school to pursue my MBA.

What can Congress do for students like me? First and foremost, I would like to stress the importance of early testing for children who struggle. Second, all students with dyslexia should have access to programs like Project Read so that they do not fall behind in their studies. Finally, the public as a whole should be better informed about dyslexia and other learning disabilities. A learning disability is not a symptom of low IQ or insufficient effort. The public needs to know that learning disabilities are beyond the students' control but can successfully be treated.

My graduation from LSU and my dream of going to graduate school would never have been possible had I not been tested early and accommodated throughout my

life. Thanks to the early intervention and consistent support I was provided, I have a real chance of being a highly productive member of society. I only recently became aware that not all students receive the same accommodations as me. It saddens me to think that not everyone has the same help and support that I did. If all students had the help that I did, they would have just as bright of a future as I do. So I am asking you, the Members of Congress, to please give these students a chance to live without being held back by dyslexia.

Senator CASSIDY. Margaret.

STATEMENT OF MARGARET LAW, CALT, DYSLEXIA & 504 COORDINATOR, CENTRAL COMMUNITY SCHOOLS, CENTRAL, LA

Ms. LAW. Good afternoon. Thank you for the invitation to participate in the hearing for a cause that is really near and dear to my heart, and that is the education of the dyslexic student. My contribution will be from the perspective of the dyslexia and 504 coordinator that I am in Central Community Schools, with a focus on accommodations.

All districts and everybody in this audience may know that, but all districts have to abide by Bulletin 1903, and that's the regulations and guidelines for the implementation of the Louisiana Law for the Education of Dyslexic Students, and that allows for the identification and the receiving of multisensory-structured language services.

Once a student has been identified at-risk and goes through an evaluation and is identified with characteristics of dyslexia, which is what this bill requires, or this law requires, they are enrolled in a multisensory-structured language class in our district and in other districts, and then the committee looks at them to see if they're eligible for section 504 accommodations or a 504 plan. The 504 is not like IDEA, which is an education benefits plan. 504 is a non-discrimination law that guarantees the disabled child has the same ability to access education in the same fashion as the non-disabled child.

A school building-level committee is in charge of identifying if they are 504 and selecting the accommodations that are data-driven that that child needs, and those accommodations occur in the classroom and on high-stakes testing. For kids in school it would be PARCC, LEAP, ACT, the EOCs for those kids in college or high school. The goal of accommodations is to provide the dyslexic student with the support they need to succeed.

Two of the most critical accommodations I want to talk about are extended time and tests read aloud. Extended time is needed for those kids who have poor decoding abilities or they are very slow at reading. I am asked how much constitutes extended time? I had a conversation with the 504 coordinator for the State, and she told me that extended time should be based on what the child needs. You should observe to see how much time they need to take a test, and then that's what they should be given.

Tests read aloud are needed for the phonological deficits. When a student has to try to read something they can't read, it causes anxiety, it causes stress.

I have two examples to share with you. I met this young man in our school system in middle school. He was identified with characteristics of dyslexia and assigned tests read aloud and accommodations. He is a talented athlete. He finished the MSL program

in 9th grade. He has been offered a scholarship already to play his chosen sport at a college. Accommodations helped him keep his GPA up so that he could do that. He is going to live his dream because he was able to get the accommodations that he needs. As a matter of fact, the college has already contacted me and asked me what accommodations he will need to succeed in college, so I thought that was great.

A second student I met when I was an academic therapist at a private school. A high school teacher came to tell me that she had a struggling reader. I met with him. He had his hoodie up over his head. You couldn't see him. I said, what can I do for you? He said, I want to be able to read like everybody else.

He was tested, entered our MSL program, received accommodations. The biggest thing for him was that not only did his reading improve, but the big thing was his self-confidence improved, and one of his teachers told me that he actually volunteered to read in class. That is a feat that the dyslexic student shies away from, and she was very proud of him, and it was great to see him in the hallway. He wasn't hidden in his hoodie. He was looking at people and he was smiling.

The IAP and the accommodations needed change over time. The parent is always the advocate when they are younger. As the child gets older, they become advocates for themselves. They sit in on the IAP reviews. "Yes, I need that accommodation." It's data-driven. They receive those accommodations.

College, as they have already spoken about, I get parents who ask me about accommodations in college. There are no official 504 plans in college. The student has to be an advocate and go to the disabilities department where they ask for accommodations. The college will ask for documentation that they have that disability, and then they will ask for documentation on what they used, which ones they were given in high school, and then they will decide if those accommodations are merited and they can earn them at the college level.

In conclusion, accommodations support the dyslexic student. They lead to academic success. They build self-confidence, and most of the time and many times they let that student achieve the goal of what they want to do, or a personal goal.

[The prepared statement of Ms. Law follows:]

PREPARED STATEMENT OF MARGARET LAW

Being Dyslexia and 504 Coordinator for a school district in Louisiana encompasses many responsibilities. A coordinator must be educated about dyslexia and be knowledgeable about the Section 504 Law. A coordinator must insure that the provisions of *Bulletin 1903, Regulations and Guidelines for Implementation of the Louisiana Law for the Education of Dyslexic Students* be properly implemented. Finally, a coordinator must remember that the needs of the student come first.

LEAs must follow *Bulletin 1903*. This publication provides for,

"Implementation of R.S. 17:7(11), Louisiana's Law for identification and services within the regular education program for students demonstrating characteristics of dyslexia."

While this Louisiana Law states that LEAs must only identify for characteristics of dyslexia, there is also a statement in the law that,

"Any private evaluation presented by the parent must be considered by the school system's pupil appraisal staff for review and interpretation."

Once a student has been identified by an initial Section 504 evaluation with characteristics of dyslexia (*Bulletin 1903*) and/or the LEA has received a diagnosis of dyslexia by way of a private evaluation, a student may be eligible to receive services and accommodations for characteristics of dyslexia or dyslexia. An Individual Accommodation Plan (IAP) is written and accommodations are selected by the consensus of the School Building Level Committee (SBLC). Accommodations are selected that will remove barriers caused by poor reading and writing and allow the student to access education in the same way as non-disabled peers. Also, the student is enrolled in a Multisensory Structured Language (MSL) Program.

The SBLC is assigned the task of selecting accommodations for the student's IAP. Accommodations must be data-driven with the intent of leveling the playing field for the dyslexic student. Section 504 accommodations are intended to support the student but not create an advantage.

While the selection and implementation of appropriate accommodations seems straight forward, it can be a challenging process. Consideration must be given in selecting accommodations in four categories: setting, presentation and response, time demands and behavior. Accommodations are also selected for standardized tests.

One frequent accommodation for the student with characteristics of dyslexia is extended time. Deciding a fair amount of time for each student poses a challenge. I am frequently asked what constitutes a fair amount of time. While this seems a straight forward question, it is sometimes complex. For example, the parent of a student called the State 504 coordinator and voiced concerns regarding the amount of extended time her child received for testing. The State 504 coordinator suggested that defining a set amount of time for extended time may possibly be a point that is arbitrational. A better approach was suggested. This approach involves monitoring the time it takes a student to take a test and then calculating the average extended time used. In this way, the accommodation is specific to the needs of that particular student.

Another accommodation needed to support most students with characteristics of dyslexia is tests read aloud. It is very frustrating for a student who has phonological deficits to read and demonstrate what is learned when they are struggling to read text. It causes anxiety and impedes success. With accommodations success is viable.

To illustrate this, I share the story of a middle-school male student identified with characteristics of dyslexia. The student began receiving services through an MSL Program and an IAP was written with accommodations of extended time and tests read aloud. These accommodations supported the student so that content learned could be assessed fairly.

This student completed the MSL Program in his first year of high school. He is a talented athlete. It is important that the student maintain a strong grade point average so that he can pursue his goal of playing his chosen sport at the collegiate level and possibly beyond. A college interested in recruiting him has already contacted me inquiring about the kinds of accommodations he may need for support in college.

A second example follows. When I was an Academic Language Therapist in a private school, I was approached by the teacher of a high school student who was a struggling reader. When I first met this young man, he sat with his head down and did not make eye contact with me. I asked him what I could do for him and he said he wanted to be able to read like everyone else.

The student began receiving instructions through an MSL Program. He began receiving accommodations of extended time and tests read aloud. His grades improved with these two accommodations. He was able to access education when his struggle to read was removed. Most importantly his self-confidence increased. So much that he volunteered to read aloud in one of his classes. Not an easy feat for a student with characteristics of dyslexia but a milestone for this student! When our paths crossed on campus, I was delighted to see that his head was held high and a smile was on his face.

As a district coordinator, I am asked by parents if students will be able to receive 504 accommodations in college. I explain that there are no formal Section 504 Plans in college but colleges will issue accommodations. The student must advocate for themselves and contact the disabilities department at the college and inquire about the process of receiving accommodations. Normally, a college will require a student to provide documentation of their disability and provide documentation that accommodations were used in high school. However, colleges make their own determination on what the student needs to perform academically.

The IAP and selection of accommodations evolves and changes over time. Early on, the parent is the sole advocate for their child and may play a major role in selec-

tion of accommodations. But as the child progresses through school, they learn to become their own advocate in selecting accommodations.

The following is an illustration of a parent who became an advocate for their child. The parent of a middle school student reported that her son was not receiving extended time on a test that measured his reading level. So, the parent advocated for son's extended time. He was allotted the accommodation, and his measured reading level increased from fourth to eleventh grade.

Part of my responsibilities as dyslexia and 504 coordinator is teacher training. At the beginning of the year, I provide school counselors with an overview of section 504. A significant part of training is instructions on how to select appropriate accommodations and how the accommodations can be implemented in the classroom to support the student.

Administrators, counselors and teachers often inquire about ways to provide the accommodations of tests read aloud, extended time and small groups if a number of students in a class require these accommodations. First, I encourage them to use text to speech programs for tests read aloud. For a small group, I encourage teachers to organize the classroom at the first of the year to include a small group testing area. Occasionally, teachers asked if students can leave the room to receive accommodations. A reminder is given that Section 504 law mandates that accommodations be given in the least restrictive environment.

I also pass on a reminder received from a workshop on Section 504 presented by Hammonds, Sills, Adkins & Guice, LLP, Attorneys at Law. This reminder states:

"The Section 504 Plan or IAP is essentially a contract. If a service is written into the Section 504 Plan and signed by a designated representative of the school system, it must be provided to the child."

"The lack of staff, lack of money or unwillingness of the staff to perform the duties are insufficient to justify a failure to implement the Section 504 Plan as written. If the service is not needed, the Section 504 committee has a responsibility to address the removal of the service from the child's Section 504 Plan."

In order for the dyslexic student to be successful, they must be given accommodations that allow them to access education in the same way a non-disabled student accesses education. In this way, support leads to success, which leads to self-confidence, which leads to the achievement of a personal goal.

Senator CASSIDY. Thank you all.

This is a Senate hearing, so unfortunately you in the audience are not allowed to ask questions. What I will try to do is, based upon what we've heard, ask questions that would hopefully reflect what your interests are.

Derrius, you describe up until 4th grade you are recognized as bright and no one knows what is going on with you. Were you the young man wearing the hoodie who wanted to read but couldn't? Do you know what I'm saying? No. 1, I would just like to know how you felt.

And No. 2, when you went to Atlanta, what was it about that teacher that she recognized the signs of dyslexia, and what did they do to help you?

REV. MONTGOMERY. To answer both questions, for me it was not only being held back in the 1st grade, but the tell-tale sign was being held back in the 6th grade and moving to Atlanta. The teacher saw my academic track record, and nothing indicated that I was a problematic child or anything like that—but reading, the comprehension piece. Again, all of this is secondhand because my mom told me most of it, right? I don't have that great of a memory.

I do remember as a second-time 6th grader being told that Louisiana had cheated you, and I really didn't understand what that meant. That came—I'm actually saying it nice, because the teacher I had was really, for lack of a better word, pissed off, because she thought I was one of those children who had just been passed along, you see?

What they had at this particular school was a Jump Start program. That program was devised for kids like myself who were very highly intelligent; however, our academic careers didn't line up to our personalities. I remember it was me and about 12 other students in that particular Jump Start program. And I must say, by the end of that school year, I was actually going into high school, into the 8th grade. That's how much intensity—not only was the work intense, but it was tailor-made just for us and I didn't have to deal with the issue of being pulled out of a class and given the IAP or anything like that and being labeled. Back in my day, it was the retarded kids that had to go into a different setting.

For me, just being able to go through that was liberating, to graduating on time and being able to graduate on time. Having younger sisters coming up behind me who were straight-A students and me being the only boy, it just did something to my self-confidence knowing that that opportunity was there for me.

Senator CASSIDY. Margaret, Louisiana cheated him. I'm told that the typical parish in Louisiana has less than 1 percent of its students identified as dyslexic. I guess, could you comment to that and then tell us, is it just that there's a teacher who is aware of the issue who then notifies someone such as you, or is there a formal screening program? If not, should there be?

Ms. LAW. Well, first I guess I'll have to say that in our district we have about 3 percent of our kids identified, so we're a little bit above that. We have a lot to do, though.

I think that part of the problem is that there is not funding. This comes under 504, and 504 is an unfunded law. There's not funding even though districts have in place procedures to identify their kids with characteristics of dyslexia, and in Bulletin 1903 it says you have to do that between kindergarten and 3d grade. If that is not done by the district, for whatever reason, then that definitely penalizes the child.

Funding, to me, is always a way where you can get more personnel and maybe get people to follow the law the way they're supposed to follow the law.

And then it's education. I talked to a teacher who is a new teacher and I asked her, I said what kind of course work did you have in college in dyslexia? She said, "Well, in my special education class, we had a little bit about it, and they also had a simulation that they did of a dyslexia program."

I still don't think that there's enough information out there, and that's still part of the problem.

Senator CASSIDY. I will ask Sally or Bennett to address this. I have to admit, if it affects 20 percent of the population, is it a principal cause for children reading below grade level? The only instruction she received was a little bit about it in a special education course. It seems as if there should be more.

Ms. LAW. Yes, I agree with you.

Senator CASSIDY. Sally or Bennett, would you want to comment on that particular issue?

Dr. SALLY SHAYWITZ. Well, it just strikes me as somehow odd, because I've heard that in Louisiana people entering prison are screened for dyslexia. You can do it for prisons but not for children entering school and perhaps help them avoid prison?

I think schools of education can do a lot more than they're doing. I think they need to introduce dyslexia, what is known about dyslexia, what programs are offered as well. I also think that it's not just a matter of reading about dyslexia, turning pages, getting tested. I think what needs to be done in addition to course work is to actually take time and intern in, optimally, specialized schools like LKA (Louisiana Key Academy) can serve as a resource where teachers, budding teachers can go and spend time with the students and learn what a dyslexic student look like, how do they react in class, and what are the most effective approaches to the students, because students not only have reading difficulty but many, many more issues.

We—Senator Cassidy, Bennett and myself—as physicians, went to medical school, but we learned even more of practical importance when we were interns and residents. I think any teaching mode has to link to an actual experiential approach.

Senator CASSIDY. Sally, you mentioned it in your talk, but could I also ask you to address once more, Allyce's parents suspected she had an issue in kindergarten or 1st grade. I am so impressed with that. My daughter, I was totally unaware until she was older. My wife is rolling her eyes right now saying I always would be unaware.

[Laughter.]

What would you ask a parent to look for or a teacher to look for when a child is in kindergarten or 1st grade?

Dr. SALLY SHAYWITZ. That's the really exciting thing about scientific progress, because now that we know that the basic difficulty is getting to the sounds of spoken language, we can look for not even non-reading signs. For example, even early on in delayed language, a toddler not appreciating the nursery rhyme because in order to appreciate a nursery rhyme you have to be able to pull apart the spoken word and focus just on the end—mat, hat, cat. These children not only don't appreciate nursery rhymes, they often lack an appreciation of any kind of rhyme. They may mispronounce words and have difficulty learning and remembering the names of letters, or they don't even know the letters in their own name.

As they go on through kindergarten and 1st grade, it's difficult for them to appreciate that spoken words come apart, like "cowboy" is made up of two parts, "cow" and "boy". They have a great inability to associate letters with sounds, and the reading effort shows no relationship to the letter to the sound.

What is really upsetting is these children, sooner than we often appreciate, turn off to reading. They claim how hard reading is, and when it's time for reading they run away or learn that if their behavior is bad, they get asked to leave the room so they don't have to be called on to read aloud.

I think it's important for parents to be aware of this, but also not to accept, oh, this is just developmental, or she'll outgrow it, or it's just a glitch. It has to be attended to and not excuses and delays accepted.

Senator CASSIDY. Let me also ask you to comment. Derrius' testimony spoke to how once he was identified, it sounds like it was boot camp for reading, and for a year it was wraparound and per-

vasive. You mention in your testimony, Sally, that 20 minutes twice a week is not adequate. Again, could you just speak to that?

Dr. SALLY SHAYWITZ. OK. I'm really glad you asked me about that. You know, dyslexia affects the whole child. It's not in a silo that if you pull the child out and inject them with some instructions that will solve it.

What happens if that happens, the child comes back into a class where they have missed what's going on. That child also, when he or she goes to another subject—Social Studies, History, Literature—the teacher has no idea about the child's reading problem, and the child is expected to do what everybody else does, and very often the teachers will get frustrated or annoyed, "Why don't you know this?," without any idea of what the child's reading level is.

What you need, and what I had said previously, is to have the teacher in each child's subject class be aware of where he or she is in reading, what helps them, what's effective, and to be able to follow the student's progress carefully, and that there's consistency in instructions. You need to be in a school where the climate is all hands on board, so the climate and instructions to dyslexic students is all unified. It needs a whole child approach during the entire day rather than the artificial belief that giving a child a package of instructions for a small period a day will address the significant, ongoing needs of a dyslexic child.

Senator CASSIDY. Allyce, you told me earlier you attended Vanderbilt Catholic. Vanderbilt Catholic is a parochial school, as you might guess, which has instructions for dyslexic students integrated in their program. Dr. Sally Shaywitz just said you want to integrate it. Vanderbilt Catholic does integrate instructions for dyslexia. Could you speak to that from your experience at Vanderbilt Catholic?

Ms. TRAPP. Integrate as in—the only thing that they did differently was that you had the option of being taken out of the classroom, which is something I found interesting because, yes, they would teach you in class, you never had to leave the classroom at Vanderbilt, unlike at St. Francis when I was in elementary school and you'd leave the classroom. Once you got to high school, you're in class with everyone, and all the teachers knew. They knew who was disabled, who had learning disabilities and you only had to leave the classroom if you wanted to, and that's only during testing times.

That was only if you wanted a quiet place to go to and you wanted teachers there who could read the test to you. I honestly didn't even need that by the time I got there because I had dozens of people who were late in the game.

So, yes, it was pretty much integrated by the time I got to Vanderbilt. I was very lucky to be in a parish that already had a very sound system that was in place for students with learning disabilities.

Senator CASSIDY. I'm struck that you advocate for yourself at LSU. Margaret said oftentimes in college you have to go and tell folks, listen, I need an accommodation. You had just told us that when you take the math test, you are accommodated for it. I think one of Sally's slides I took notes from is the child has to learn to advocate for himself or herself. I gather that your experience with

dyslexia appears to have taught you that ability to self-advocate. A fair statement?

Ms. TRAPP. Oh, absolutely. You have to know how to advocate for yourself because you won't always have a parent or a teacher there doing it for you. You have to be able to explain yourself because when you're on the playground as a child, you're not going to have a teacher there telling your friends why you were not in class today. You're not going to have a parent there explaining to other students you meet why you speak differently, why you do things differently from them. You have to be able to advocate for yourself.

By the time you get to high school, most people know. Most of your friends understand. You always have a friend who says, "I don't believe in dyslexia" or "I don't think you're very smart," and you have to advocate for yourself. That's when you have to step up to the plate and say you don't have to believe it's a real thing, but it is. You don't have to believe it.

It took me about 4 years to get my best friend to actually believe I was dyslexic and that it was a real learning disability. He thought I was just lazy and I didn't want to study, which was not the case. If you saw the stack of flash cards I have in my room each day—that was not the case.

You have to advocate for yourself. You have to be your No. 1 champion, honestly, because if you don't tell people what's going on with you and you don't understand yourself and your own learning disability, how do you expect anyone else to, and how do you expect to get the accommodations?

Senator CASSIDY. Derrius, I'm struck, you now advocate for others.

REV. MONTGOMERY. Yes.

Senator CASSIDY. Your empathy with the children who struggle brought you to seek out the opportunity to serve on a board that would minister to those struggling children. I think that's what I gathered. Would you comment on that?

REV. MONTGOMERY. Yes, and the fact that I have three toddler boys that I'm raising right now was the fire that was lit, you know? I don't want them to go through it. My wife and I are probably driving Dufrocq crazy. That's where my oldest son attends. Because we're very, very much still involved. His mom is a smarty, right? Dad is the one with the little struggles. Anything that he deals with, of course they're looking on my side. We just want to make sure that he's accommodated properly.

When I think about the lack of a father in my own family in terms of relatives, I have no choice but to advocate for kids outside of my own home.

Senator CASSIDY. You mentioned your child in 1st grade. If I can ask you, right now we're trying to do a reauthorization of what is called the No Child Left Behind or the Elementary and Secondary Education Act. One of the things that has come up is standardized testing.

Bennett, could you speak to standardized testing and the dyslexic, please?

Dr. BENNETT SHAYWITZ. Well, yes. I think this is a really important point, Senator Cassidy. I didn't get a chance to show these slides earlier, but I think that it's really critical for everybody to

understand that the standardized tests that are used in dyslexic students are, in fact, inappropriate for dyslexic students.

For example, I was talking about the State standards and the PARCC, which is designed to measure those standards. That State standard and the PARCC are inappropriate for dyslexic elementary students because the Common Core standards and the PARCC are based on the mistaken belief, and this is in the description of the Common Core, that all students, including dyslexic students, will be fluent readers by the end of 2d grade. That's what Common Core demands, and that's just not true. It's not true for dyslexic students.

Also, the Common Core says all students, including dyslexic students, should read at grade level and above. Well, for dyslexic students, that's just not the case.

The Common Core standards are comprehension-focused for reading instructions. Reading instructions says that you should use complex tests and that should be the basis of all reading instructions, and they ignore whether or not the student can actually read the words in the complex test. This really has serious implications for dyslexic students.

For example, anybody who has ever looked at the 3d grade PARCC, the PARCC for 3d grade students is more targeted to reading level of the 5th grade, and it's focused on reading comprehension, and it's very inappropriate for dyslexic students. It has the pernicious effect of schools dropping all other instructions, including much-needed decoding instructions, to focus almost exclusively on comprehension.

In addition, the multiple-choice questions in the PARCC are really inappropriate for students who are dyslexic who need a lot more context to be able to understand. Everybody should understand that the Common Core's focus on comprehension may be appropriate for students in high school or perhaps upper-level junior high school, but it's wholly inappropriate for children in very early grades, especially dyslexic students who are invariably still struggling and working very hard to master decoding.

The danger is that the PARCC will provide misleading data, with very serious consequences not only for the student, but for the parents and for the teachers. It's not that the students are not doing what they should do; the test is inappropriate. It should not be used in dyslexic students.

Senator CASSIDY. I stepped away from the microphone, Bennett, to see your slides, so that was the slight hesitation.

Sally, did you have something to say?

Dr. SALLY SHAYWITZ. Yes. I was listening to the accommodations discussion and self-advocacy, and I thought we heard that the school's report—that they identified 3 percent of their population as dyslexic, when we know that it's, I'm doing quick math here, it's seven times more common. Think of all the children who can't self-advocate because they don't know what they have. They have never been identified. They can't have, even though they're dyslexic, they can't have the benefit of accommodations because they don't know they're dyslexic.

It's such a huge disservice on so many levels to not identify dyslexic children. Not only don't they receive the intervention and

the appropriate schooling, but it follows them through life. They think they're not smart, they don't have self-awareness, they can't advocate for themselves, and even though they're slow readers because they are dyslexic, they can't even think of or apply for or receive accommodations. It keeps them back all through life, and that's not fair. We're better as a nation than that, and we can't know about dyslexia at the level of a school but then just ignore the children who need us.

Senator CASSIDY. Margaret, that raises the issue of funding. You mentioned that the 504 is unfunded.

Ms. LAW. Right.

Senator CASSIDY. What does it cost to screen all 1st graders or all elementary school kids or all new transfers?

Ms. LAW. Well, I never put an actual number to the cost, but in time, it takes much time, as we have 350 kids in second grade. Starting in January, we will begin the universal screening. It takes a team of teachers to go through the process of all the steps that you have to do for that to identify all of the students and then pull the ones at risk and then administer tests to them. It's a lot of time for the counselor who does the testing. I would say in the second semester, the counselor probably spends 50 percent of their time looking at universal screening in our school system, and we have about 350 kids, as I said, that we look at.

Senator CASSIDY. Three-hundred-fifty 1st graders, or 350 2d graders?

Ms. LAW. We do 2d grade, and in the month of January of 2d grade is our year to do universal screening.

Senator CASSIDY. Let me ask, Sally and Bennett, you can also weigh in on this question.

Dr. SALLY SHAYWITZ. Well, given the data that we now have, strong published scientific data showing that that achievement gap is already present in 1st grade, my hope is that we would rethink our approach to screening and begin screening as early as possible, kindergarten or 1st grade. There are measures for the child, but also new measures that teachers can use, because that gap, it's so hard to overcome. It's there already.

I think we have an obligation to our children and to our teachers to identify this at the earliest possible time, because it's so hard to overcome, and it's huge. It really is very, very large, and it's now supported by scientific data.

Senator CASSIDY. I'm struck, in support of that, Allyce mentioned when she went to high school she had been accommodated early and therefore did not need as much help. Those who had not been diagnosed until later in their education were the ones who still needed help. The absence of early screening intervention ends up having persistent effects into adolescence.

Again, Sally and Bennett, do the data show that?

Dr. BENNETT SHAYWITZ. Yes. In fact, it is persistent.

Dr. SALLY SHAYWITZ. Oh, my goodness, it's persistent. You have the additional difficulties of not knowing what you are, thinking you're stupid, not wanting to go to school, all the other consequences, and also to have avoided reading. We get better in reading by reading. There are so many negative consequences, and it becomes more and more difficult to remediate.

We had the personal experience of trying to work with middle schoolers versus working with kindergarteners and 1st graders, and there's no comparison. We really have to get there early. When we think of, oh, it's costly, what is the cost to society of the child not being identified and not receiving what that child needs? That's huge on a personal level, on a family level, and on a national level.

Senator CASSIDY. Yes. I will point out that I read once that you can look at poor reading rates in 3d grade and predict the number of prison cells you need 20 years later. The cost of a prisoner I think is \$50,000 a year or something such as that. If we could somehow understand that and do something at the earlier stage.

Let's see if there are any other questions I had that I wanted to ask.

By the way, I'm also struck, Allyce, that you feel totally comfortable with dyslexia, again almost fighting with your friend to kind of prove, you know, "C'mon, guy, get off it." I speak to some who are older, and they don't want anyone to know. I know an 80-year-old guy, incredibly successful, and he doesn't want anyone to know that he's dyslexic, even though he's so successful that it wouldn't matter.

Clearly, at some point you just became you, like you have blonde hair and you're tall and whatever, and it's nothing to be ashamed of. Is that a fair statement?

Ms. TRAPP. Absolutely. I can't see why someone so successful wouldn't want to talk about how he got to his success with dyslexia. I think that's something incredible to share with everyone how he did that. I think Walt Disney had dyslexia. I think that's incredible. It shows you that you don't have to have the regular processing brain to do incredible things.

I'm totally comfortable with it because I don't know anything else. I don't know what it's like to have a regular functioning brain. I only know the brain that I have, and I love the brain that I have. Yes, sometimes I'm really frustrated, but I'm just like, "Oh my gosh, I wish I knew what it was like having a different brain," but I don't. I work with what I have and I go with it, and it's just part of being me.

I'm an extremely confident person, and I have been since I was a little thing, so it's like, "all right, cool, one more thing, let's work with it." I had so many teachers who were like, this isn't a hindrance, it's just something else to work on, it's not a big deal. I have parents who said it's OK, we're just going to work with it, and all my friends were fine with it growing up.

Of course, I had the friend who didn't believe it was a real thing, but he came around. My senior year in high school he said, "it's real, it's no joke." He had seen it in action for 4 years.

It's nothing to be ashamed of. There's nothing wrong with me. It's just a different way of thinking, and it's a whole new window of creativity and opportunity, and I'm doing just fine with it. I'm totally fine with it. It's a comfortable setting for me. I'm comfortable with my dyslexia. I'm comfortable with my disability. I don't even define it to be a disability because I've overcome it. It's not holding me back.

Senator CASSIDY. Derrius, you were diagnosed later in life, and frankly you recounted how you had a real struggle prior to that

point. Do you find that your attitude toward having a self-diagnosis of dyslexia is different than Allyce's or exactly the same?

REV. MONTGOMERY. I think mine is exactly the same. I'm proud to identify with it, but I have to look at my own successes in my own life with the disability. I have still been able to get married, finish school, go back to school. I started a small business here in Baton Rouge. I have achieved the American Dream, and I'm still trying to achieve it. I'm only 31, so I have a lot more to conquer. I think that would only motivate one to continue to speak out.

Senator CASSIDY. Let me ask if there are any final comments.

Sally and Bennett, do you all have any final comments?

Dr. SALLY SHAYWITZ. It won't surprise you that I do.

[Laughter.]

If we remember that dyslexia is a paradox, if we think of the sea of strengths model, we have that encapsulated weakness in decoding, getting to the sound of the spoken word, but we also have those higher level strengths. The way we look at it is when a child starts school, they can go in either direction. What will it be? The weakness that characterizes their life or the strengths? That won't be determined. Are they identified? Are they in the proper school? Do they get the proper intervention?

People who are dyslexic are filling our prisons, but they're also receiving Nobel Prizes and Pulitzer Prizes. The capabilities go in both directions. We as a society are letting them down by not identifying and providing what they need.

Again, I just have to say, having visited and seen what happens in LKA (Louisiana Key Academy), a specialized public charter school that's giving so many children the opportunity, disadvantaged children, children of color, that they would not have had, and that can help ensure that it's the strengths rather than the weakness that characterizes their future lives.

Senator CASSIDY. Bennett.

Dr. BENNETT SHAYWITZ. I'll leave it there. It's hard to follow Sally.

Senator CASSIDY. Margaret, anything else?

Ms. LAW. I think one of the things I want to point out is that the students who have dyslexia have to have a specialized program in order for them to be a better reader and to be successful, and in the State of Louisiana, to my knowledge, there are no colleges or training centers where you can train to be an Academic Language Therapist. When I decided I wanted to go into the field of dyslexia, I had to go to Texas to do my training. There's nowhere in the State of Louisiana. It would seem that perhaps a community college or something could be done so that we could train and have a Certified Academic Language Therapist training center in our State.

Senator CASSIDY. Allyce.

Ms. TRAPP. All I'll say is thank you so much for having me today. I really appreciate you giving me a chance to talk about what it was like growing up with dyslexia and hopefully helping, in some small way, other students to get what they need.

Senator CASSIDY. Derrius, you're the clean-up man.

REV. MONTGOMERY. I'm with these two here. I thank you for the opportunity, and I think that as long as we continue to have these

types of discussions, both privately and publicly, I think the whole community will definitely get behind this movement and you'll start to see more people stand up and advocate for students of dyslexia.

Senator CASSIDY. I will finish by—first, Evelyn Gauthreaux, we talked about LKA (Louisiana Key Academy), she is the principal, so let me just point her out right there. She is raising her hand.
[Applause.]

Let me just echo what Sally said, her observation. It seems as if the diagnosis of dyslexia leads one to a point, and if there's appropriate remediation and accommodation, the struggle to overcome and then the subsequent success actually leads to insights that one would otherwise not have. If everyone is thinking like this, the dyslexic is the out-of-the-box thinker who thinks so creatively when others are just in a path. If they are not accommodated and their needs not addressed, then it is not an arc toward success, it is a descent into a frustrated life which, at its worst, ends up in prison, and at its not-so-bad ends up much lesser than it could be, and that comes through over and over.

That said, I thank you all for being here.

I have a script to follow.

The hearing record will remain open for 10 days for Senators to submit additional comments and any questions for the record they may have.

Thank you for being here today.

The committee will stand adjourned.

[Whereupon, at 4:24 p.m., the hearing was adjourned.]