ALASKA STATE LEGISLATURE
JOINT MEETING
SENATE JUDICIARY STANDING COMMITTEE
SENATE EDUCATION STANDING COMMITTEE
March 14, 2025
1:30 p.m.

MEMBERS PRESENT

SENATE JUDICIARY

Senator Matt Claman, Chair
Senator Jesse Kiehl, Vice Chair
Senator Gary Stevens
Senator Robert Myers

SENATE EDUCATION STANDING COMMITTEE

Senator Gary Stevens, Vice Chair
Senator Jesse Kiehl

MEMBERS ABSENT

SENATE JUDICIARY

Senator Löki Tobin

SENATE EDUCATION STANDING COMMITTEE

Senator Löki Tobin, Chair
Senator Jesse Bjorkman
Senator Mike Cronk

COMMITTEE CALENDAR

PRESENTATION(S): SUPPORTING THE CONNECTING BRAIN DURING ADOLESCENCE

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

ADRIANA GALVAN, Co-Executive Director
Center for the Developing Adolescent
University of California Los Angeles
Los Angeles, California
POSITION STATEMENT: Delivered a presentation on the developmental science of adolescent brain development and its association with system impacted young people, particularly in the carceral system.

ACTION NARRATIVE

1:30:54 PM
CHAIR CLAMAN called the joint meeting of the Senate Judiciary Standing Committee and the Senate Education Standing Committee to order at 1:30 p.m. Present at the call to order were Senators Myers, Stevens, Kiehl, and Chair Claman from the Senate Judiciary Standing Committee and Senators Kiehl, and Vice-Chair Stevens from the Senate Education Standing Committee.

PRESENTATION(S): SUPPORTING THE CONNECTING BRAIN DURING ADOLESCENCE

1:31:46 PM
CHAIR CLAMAN announced a presentation on supporting the connecting brain during adolescence by Dr. Adriana Galvan, Co-Executive Director of the UCLA Center for the Developing Adolescent. He asked her to identify herself for the record and begin her presentation.

1:32:39 PM
ADRIANA GALVAN, Co-Executive Director, Center for the Developing Adolescent, University of California Los Angeles (UCLA), Los Angeles, California introduced herself. She is also dean and vice-provost of undergraduate education & professor of psychology at UCLA. She expressed her intention to share research on adolescent brain development and system impacted young people, particularly in the carceral system. She qualified her experience, stating she is a neuroscientist by training. She studied the adolescent brain for over 25 years, focusing her attention on understanding the dopamine system in the brain, the reward system, and the prefrontal cortex. She also focused on understanding how normal changes that happen in the brain during adolescence support transition into adulthood.

1:33:47 PM

MS. GALVAN moved to slides 2 and 3, What Is Adolescence? The graph on slide 2 shows the developmental periods of adolescence. She explained that the definition and developmental stages of adolescence are not agreed upon in the research and science community, because adolescence spans many years. It typically starts when puberty begins, 10-12 years of age, and it continues through the early to mid-20s when the brain stops developing and starts aging. The graph, on slide 2, shows the age ranges for the different phases of adolescence, which are the early, middle, and late phases. Each phase is distinct in how adolescents interact socially, their biological changes, and the length of each phase.

MS. GALVAN continued the topic on slide 3, which pictured a group of 14-year-old eighth graders who were in vastly different stages of physical, social, and psychological development. She explained that adolescence is distinct from other age groups because its onset varies widely among individuals, as seen in the photo, and the experiences they have as per their community involvement and school environment.

1:35:37 PM
MS. GALVAN moved to slide 4, Why is Adolescence Special? She stated that scientists and developmental psychologists have shown renewed interest in studying adolescence. She explained that research investments in adolescent development build upon the extensive work done in early childhood development. Adolescence is the final stage of development before adulthood and represents the last opportunity to provide the right experiences for young people.

1:37:17 PM
MS. GALVAN moved to slides 5 and 6, Brain Development During Adolescence. These slides indicate that brain development during adolescence is "fundamentally a story of connection within the brain and between young people and their environments."

MS. GALVAN said young people undergo significant brain development during their adolescent period. She clarified that development, in this sense, does not refer to the size of the brain, which generally stabilizes around age five. Rather, it refers to the ongoing refinement of neural connections. She said major developmental gains occur in the prefrontal cortex, the region responsible for decision-making and future planning. Other regions of the brain support how young people learn about their environment, their social connections, etc. She explained that, based on research synthesized by her and her colleagues at

the Center for the Developing Adolescent, understanding the adolescent brain means understanding how those neural connections form and strengthen.

MS. GALVAN emphasized that experiences during adolescence have a powerful influence on how effectively the brain forms its interrelated connections and shape how well adolescents connect to their communities, schools, and emerging passions. She explained that the connections within the brain and those between adolescents and their environments are equally important and influence one another bilaterally. The connections made in the community are integral to those made within the brain. She defined the final stage of adolescent development as the onset of adulthood when the brain becomes capable of faster processing and using its neurons to plan for the future.

1:39:18 PM
MS. GALVAN moved to slide 7, Brain Connectivity is Refined During Adolescence. Slide 7 shows an image of a glass brain that represents all the connections which exist in the brain from birth. She said that during adolescence there is a greater refinement of these connections from the front to the back of the brain, which helps with different aspects of development, like impulse control skills.

1:40:02 PM
MS. GALVAN moved to slides 8 and 9, Plasticity in Brain Development During Adolescence:

[Original punctuation provided.]

> Neurons can gain and lose about 25 percent of their connections weekly at puberty
>
> Drops to about 10 percent in adulthood

MS. GALVAN stated that during adolescence, the brain exhibits tremendous plasticity, which refers to the brains capacity to incorporate new information. For example, young babies are able to learn language because their brains are plastic and receptive to the language of their parents and caregivers. She said adolescent brains have a second wave of plasticity during which neurons change in response to their environment. She drew attention to two images on the slides, explaining they show visible changes in synapses from one day to the next in a model system of adolescence. Neurons can gain and lose approximately twenty-five percent of their connections weekly, or, in some

cases, daily, during puberty. Neurons make and lose connections at a rapid rate in response to environmental input. In adverse environments, neurons are lost more quickly during adolescence; conversely, in enriching environments, neurons are gained more quickly. The ability to lose or gain neurons drops from twenty-five percent during adolescence to about ten percent [in adulthood.] She emphasized this illustrates a clear distinction between adolescent and adult brain plasticity.

1:41:57 PM
MS. GALVAN moved to slides 10 and 11, A Brain Designed for Exploration and Connection. Slide 10 showed an illustration of the brain, where the striatal regions are located, and indicated this region responds to diverse rewards. The slide indicates that motivation and reward systems are more active in adolescents. Slide 11 showed a diagram which compared the adolescent hippocampus and striatum regions of the brain to that of adults. The slide indicates that adolescents are uniquely skilled at exploratory and flexible learning.

MS. GALVAN said one of the key regions that undergoes the greatest plasticity is the striatum. She explained that the striatum supports the brain's motivational, reward, and learning systems. The motivational system drives adults, adolescents, and babies toward specific behaviors at each stage of development and this motivation system is particularly active during adolescence. She referred to the areas in yellow, stating the brain shows greater activation in the striatal region of the adolescent brain compared to those of the adult brain. She explained that neurons in the adolescent brain exhibit heightened responsiveness to reward stimuli, meaning that when adolescents find something rewarding, their brains are more responsive.

MS. GALVAN referred to the image on slide 11, stating the adolescent brain exhibited greater activation than the adult brain when learning new information. She explained that, in this experiment, the adolescent brain demonstrated a stronger capacity to learn compared to the adult brain, a difference attributed to differences in the neurotransmitter dopamine.

1:43:35 PM
MS. GALVAN moved to slide 12, Dopamine in Adults. She explained that dopamine is often associated with being a neurotransmitter that is released when individuals experience something rewarding or learn something new. In adults, dopamine is released in

response to such stimuli. She said the image on slide 12 illustrates this mechanism.

1:43:58 PM
MS. GALVAN moved to slide 13, Dopamine in Adolescents. As the image on slide 13 depicts, dopamine neurons are more numerous in the adolescent brain compared to the adult brain. She said this explains why adolescents tend to be more reward-seeking in their behavior and more likely to take risks; they release more dopamine than adults. She emphasized that dopamine does not only drive risk-taking and reward-seeking behavior, but also plays a critical role in helping adolescents learn from their environment more quickly.

1:44:30 PM
MS. GALVAN moved to slide 14, The Adolescent Brain is Primed to Learn from Experience:

[Original punctuation provided.]

> During a learning experiment, adolescents were better than adults at learning associations

MS. GALVAN said the chart on this slide shows that, in an experiment in which individuals were asked to learn new information, adolescents outpaced adults in how well they learned.

1:44:43 PM
MS. GALVAN moved to slide 15, Experience Plays a Major Role in Brain Development. The slide shows a flowchart depicting the "conceptual representation of youth adversity exacerbation in the juvenile justice system." The slide pointed out that:

[Original punctuation provided.]

> Social structures and systems can support or challenge positive development
>
> Communities and cultural practices support development
>
> Negative experiences including exposure to violence and isolation impede healthy development

MS. GALVAN discussed how experience intersects with the biological changes that occur during adolescence. She stated that experience plays a major role in brain development. The

social structures with which adolescents engage can either provide positive support or create challenges when conditions are not optimal for meeting developmental needs and milestones. She said research shows that negative experiences, such as exposure to violence or isolation, can impede healthy development. She referred to the flowchart schematic on the slide, stating it illustrates how the burden of adversity can build over time. In other words, adversity experienced earlier in life can be amplified overtime during adolescence.

1:45:36 PM
MS. GALVAN moved to slide 16, Supporting Youth after Early Adversity:

[Original punctuation provided.]

> Many of us have faced challenges or adversities early in life and may need extra support
>
> Our adolescent years present an opportunity to build positive connections by supporting key developmental needs

MS. GALVAN stated that supporting youth after early adversity is critically important. She said many people experience adversity, not only adolescents. She referenced an adult survey showing that ninety percent of adults have faced adverse experiences earlier in life, and about thirty-three percent of those reported experiencing five or more. She acknowledged that many adults might need support with past trauma and remedies should not be limited to adolescents. She emphasized, however, that adolescents may require additional support during maturation to help them manage their experiences, meet developmental needs, and ultimately contribute to their communities and thrive.

1:46:29 PM
MS. GALVAN moved to slide 17, Developmental Needs During Adolescence. She said scientists around the world have identified the following seven experiences that support the connecting brain and help adolescents thrive:

Exploring the world and testing out new ideas and experiences
Everyone learns through exploration, whether by trying new subjects, pursuing different opportunities, or experimenting with new directions. Adolescents require those same opportunities.

Building decision-making and emotion-regulation skills
Adolescents need opportunities to build decision-making and emotion-regulation skills. Individuals learn to make sound decisions by being given the chance to practice those skills in supportive environments.

Forming values, goals, and identity
Adolescents need opportunities to form values, goals, and identities. They need opportunities to find meaning and purpose through contribution.

Finding meaning and purpose through contribution
There is often a narrative that as young people become adolescents, they start to care less about their community. Contrary to this common belief, adolescents do not withdraw from their communities. Research shows they are often more willing to engage in causes they believe in and passions that get them excited. In part, this is because the "social brain" becomes more active during adolescence, enhancing their ability to understand the perspective of others and motivate them to contribute.

1:47:51 PM
MS. GALVAN continued the discussion of seven experiences that support the connecting brain and help adolescents thrive.

Support from parents and other caring adults
Adolescents need continued support from parents and other caring adults. Mentoring programs are particularly effective for youth who may lack supportive parenting. Adults provide essential scaffolding for young people, especially those who have experienced early adversity.

Finding respect among peers and adults
Adolescents need respect from peers and adults. Because of the maturation of the social brain, adolescents are highly perceptive in recognizing when respect is genuine and when it is not.

Sufficient sleep to support mental and physical wellbeing
Adolescents need sufficient sleep, a factor often overlooked in discussions about adolescent development. She compared it to infancy, when parents are vigilant about ensuring good sleep for their baby's brain development. Sleep continues to be critical in adolescence because it consolidates new memories, clears unneeded information, and supports mental health, physical

health, learning, and emotion regulation, all essential components for adolescents to thrive.

1:49:17 PM
MS. GALVAN moved to slide 18, Confinement as Adversity:

[Original punctuation provided.]

Confinement can:

- Expose young people to stressful environments
- Limit protective factors like community, family, and culture
- Restrict adolescents from filling key developmental needs

MS. GALVAN stated that extensive research has been conducted on juvenile incarceration and confinement. She said there is growing interest in understanding how confinement itself may constitute an adverse experience for young people and may run counter to supporting their developmental needs. She explained that confinement often exposes adolescents to stressful environments while limiting key protective factors such as community, family, and culture, which are essential for healthy development.

MS. GALVAN said traditional confinement restricts adolescents from meeting their core developmental needs, including opportunities for exploration, receiving support from caregivers, and the opportunity to contribute to others. She emphasized that because the adolescent brain is highly plastic, this period represents a window of opportunity during which youth can be successfully redirected or rehabilitated, provided their developmental needs are met.

1:50:13 PM
MS. GALVAN moved to slide 19, Aligning Justice Models with the Rehabilitative Opportunity of Adolescence:

[Original punctuation provided.]

Adolescents have unique rehabilitative potential.

"Rehabilitative efforts that capitalize on youths' existing strengths and incentivize learning through

rewards versus punishments are neurodevelopmentally poised to succeed."
- Orendain, Galván, Smith, Barnert, Chung, 2022

MS. GALVAN stated that a central theme of this presentation was to highlight scientific findings that demonstrate the potential for rehabilitation during adolescence. She said some justice models recognize that adolescence is a period of significant brain plasticity and opportunity. She noted that some describe this concept as "plasticity equals possibility," emphasizing the adolescent brain retains the capacity to be redirected, even after experiences of trauma or adversity. She explained that rehabilitative efforts can utilize the ongoing development of adolescent brains by offering new opportunities to meet developmental needs that may not have been fulfilled earlier in life.

1:51:18 PM
SENATOR STEVENS asked what methods are used to identify adolescents who have experienced early adversity in their lives.

MS. GALVAN replied that schools are often a good place for identifying young people who are experiencing adversity. She explained that adversity manifests differently for each individual, but signs such as withdrawal or lack of engagement are indicators. She said schools serve as the first line of defense for what may be occurring at home.

1:52:17 PM
SENATOR MYERS asked about a debate that arises throughout a lot of school districts, which is start times for high schools. He requested she expand on adolescent sleep needs and how that pertains to high school start times.

MS. GALVAN replied that high schools adopting later start times have reported notable benefits, including a decline in car accidents, which remain the leading cause of death among young people, and an increase in SAT scores and grade point averages. She said there is often concern that delaying the start of the school day by thirty to sixty minutes will simply cause students to go to bed later, negating the benefit. However, research has shown that bedtimes do not shift significantly, resulting in an overall increase in total sleep duration. She said the Seattle School District has observed positive outcomes as a result of implementing this a later start time.

1:53:47 PM

SENATOR STEVENS asked her to comment on the shared experience of the COVID pandemic and whether it affected social development. He remarked that he had observed such impacts among his own grandchildren and asked if this was an issue she encountered in her research.

MS. GALVAN replied that extensive research has shown challenges in social development following the pandemic. She noted that many young people experienced significant isolation during that period. She said social media played a helpful role in keeping youth connected, though it could not replace the value of in-person interaction. Speaking from her experience as Dean of Undergraduate Students at UCLA, she added that faculty have observed noticeable changes in the social development of college students who were in high school during the pandemic.

1:54:51 PM
SENATOR STEVENS asked whether it is possible for children who have experienced developmental delays to catch up.

MS. GALVAN replied, absolutely, noting this is one of the remarkable features of brain plasticity. She explained that while adults have a harder time recovering from adversity or developmental delays, young people's brains are specifically designed to adapt to a changing world.

1:55:43 PM
CHAIR CLAMAN remarked that the committee is considering legislation to lower the age of consent for mental health treatment. He explained that the proposal would allow youth aged sixteen and seventeen to obtain a limited number of visits with a mental health provider without parental consent. He observed that this relates to adolescent development and asked for her perspective on whether sixteen- and seventeen-year-olds should have the ability to independently access a degree of mental health treatment.

MS. GALVAN replied absolutely. She said no one understands their own mental health better than oneself. She said youth at that age are self-aware enough to recognize when they need support, and if they are seeking help, it likely reflects their understanding that their feelings or experiences are atypical. She said one of the reasons she would endorse this type of legislation is that the brain remains highly plastic during adolescence and early intervention, whether for mental health, learning, or other needs, leads to better outcomes.

CHAIR CLAMAN asked whether this approach aligns with the research she has conducted, particularly the evidence that addressing issues early supports stronger development and quicker recovery.

MS. GALVAN replied that it does and cited her longitudinal research on children with anxiety. She said the study followed participants between the ages of nine and thirteen and found that some children's anxiety improved while others worsened. The strongest predictor of improvement was early access to treatment. She stated that although those participants were younger than adolescents, the findings reinforce the principle that early intervention is the most effective approach to redirect misguided or adverse behaviors.

1:58:03 PM
SENATOR KIEHL referred to slide 19 that discussed aligning justice models, and asked whether there are key principles within the most promising juvenile justice models that should be considered legislatively. He wondered whether that field is well developed or still emerging, and requested general guidance.

MS. GALVAN replied that she has a good friend and colleague at the University of California-Irvine who studies this very question, specifically recidivism among young people. She said the research indicates that the number one predictor of future outcomes is how an individual is treated within the juvenile justice system, regardless of whether they received a formal sentence or not. She explained that the data show individuals who received less harsh sentences in the first year had substantially lower recidivism rates compared to those who received severe sentences. She noted that although variation exists among individuals, the findings underscore the value of more rehabilitative, less punitive approaches for young offenders.

1:59:49 PM
SENATOR KIEHL said the findings from that research provides a reasonable guidepost in terms of how long juveniles should be in the justice system. He asked about models that address how youth should spend their time while in the system.

MS. GALVAN asked him to clarify what aspect of their time.

SENATOR KIEHL explained that some young people spend significant time in juvenile justice facilities. He asked about her research and what promising trends or key principles lead to the best

outcomes once those youth are released and reintegrate into society.

MS. GALVAN replied that strong community supports are critical following release. She emphasized the importance of immediately engaging with youth upon reentry, maintaining continuity with family, and positive peer networks outside of incarceration. She said research shows that the climate inside secure facilities strongly correlates with the likelihood of reoffending. She referenced a study, which found that youth with more positive perceptions of their confinement, whether or not those perceptions aligned with objective conditions, were less likely to be rearrested, return to a secure facility, or self-report reoffending. She reiterated that outcomes are influenced as much by the support youth receive after release as by the environment inside during incarceration.

2:01:49 PM
CHAIR CLAMAN stated that it sounds like one of the most important areas of focus in juvenile justice appears to be the reentry environment, the period immediately following release. He said that is similar to adult reentry, but more critical for juveniles to have available resources, and to invest in those resources.

MS. GALVAN replied that this is critically important. She explained that any transition into a new environment is a significant change for young people, which is why considerable effort is devoted to onboarding and community building when students begin high school or college. The same is true, and perhaps more so, for young people who have been incarcerated.

2:02:48 PM
SENATOR MYERS referenced her testimony that there were lower reoffending rates among youth who reported more positive experiences during confinement. He said her testimony seems to conflict with conventional thinking, which typically assumes that harsher correctional conditions give people a reason not to go back. He asked whether this represents a misunderstanding in the conventional approach or a difference between adolescents and adults.

MS. GALVAN replied that it is interesting how data can challenge assumptions. Findings suggest that when young people report more positive experiences during confinement, it is likely because their time was focused on preparation for the future. She explained that those positive experiences might involve access

to skills training, education, and community-building that support reintegration once they are released as opposed to an incarceration-focused experience.

2:04:00 PM
SENATOR MYERS asked whether the difference she described is unique to adolescents or if similar effects are also observed among adults.

MS. GALVAN replied that she does not know that much about this for adults. However, for adolescents, opportunities for skill building, decision making, and peer connection appear to play a critical role. She explained that these developmental factors likely make adolescents more responsive to supportive, choice-based environments than adults.

2:05:15 PM
There being no further business to come before the committees, Chair Claman adjourned the Senate Judiciary Standing Committee and the Senate Education Standing Committee meeting at 2:05 p.m.