

## Special Issue Article

# Leveraging science to inform social policy: How Ed Zigler created a movement

Kimber Bogard<sup>1</sup> and Ruby Takanishi<sup>2,\*</sup>

<sup>1</sup>New York Academy of Medicine, New York, NY, USA and <sup>2</sup>New America, Washington, DC, USA

### Abstract

Ed Zigler believed that developmental science should be applied to policy, programs, and practices to improve the lives of children and families. He shared this belief with others and paved the way for alternative career pathways. This paper describes how Ed influenced others to connect science with program development, evaluation, and policy, and created networks of applied scholars. Ed Zigler's influence is broad and spans beyond academia to influencer organizations. We weave our own professional experiences throughout the paper, which we organized around three lessons we learned from Ed: (a) explore alternative career pathways and build the field; (b) start with the science and think application; (c) apply the knowledge and influence policy.

**Keywords:** Ed Zigler, mentorship, philanthropy, policy, science

(Received 26 March 2021; revised 26 March 2021; accepted 26 March 2021)

### Introduction

Ed Zigler, known as the father of Head Start, influenced students and other young scholars who wanted to apply their knowledge to improve the conditions and systems in which children grow and develop so that they could thrive. He informed new ways to view populations who are marginalized by society through research and led cutting-edge programs and policies that continue to serve children and families today. As career-long scholars in applying developmental science to services and systems, we are indebted to Ed for helping to pave the way for applied science to be understood and valued. As a tribute to Ed's work, we highlight some of the most significant impacts he had on social policy and how this helped shape the career trajectories and work of many, drawing examples from our work and interviews with others who were touched by Ed's mentorship.

Much has been written about Ed's influence in the sphere of social policy as both an insider, working in the Johnson administration in the 1960s and as an appointed director of the Office of Child Development in the Nixon administration, and as an influencer outside the halls of Congress. What is known, but much less written about is, Ed's impact across generations of applied scientists and policy influencers. The authors of this paper are the beneficiaries of such mentorship and influence. Ruby Takanishi and Kimber Bogard both experienced direct mentorship and guidance from Ed. Throughout the paper, the first author (Kimber Bogard) is referred to in the first person singular.

\*Deceased August 8, 2020

**Author for Correspondence:** Kimber Bogard, 1216 Fifth Avenue, New York, NY 10029, USA; E-mail: [kbogard@nyam.org](mailto:kbogard@nyam.org).

**Cite this article:** Bogard K, Takanishi R (2021). Leveraging science to inform social policy: How Ed Zigler created a movement. *Development and Psychopathology* 33, 431–440. <https://doi.org/10.1017/S0954579420002126>

Ruby encountered Ed when she was teaching at the University of California, Los Angeles (UCLA). Here is an excerpt from her oral history: "About in 1978 or so, we were visited by Ed Zigler at the UCLA Developmental Studies Center, along with the President of the Bush Foundation in St. Paul Minnesota, Humphrey Doermann, and one of the chief program officers, Stanley Shepard, to start to develop a proposal for one of the Bush Centers in Child Development and Social Policy. There were eventually four, and UCLA was the western center, and the only center located in a graduate school of education" (Takanishi, 2020, p. 13). When Ed Zigler took his sabbatical at Yale University in the early 1980s, he asked Ruby to teach his social policy and child development seminar.

In 1995, I spent hours in the library of Hunter College, City University of New York, consuming books and journal articles about Ed's work. While at Hunter College, I volunteered as a teacher's assistant at the Cardinal Spellman Head Start Center in the East Village in New York City. A year later, I created a resource directory for the center as part of a child welfare fellowship program.

In 1996, I worked up the courage to call Ed's office to see if I could come to Yale and meet him in person. He graciously accepted and we had a lovely conversation about Head Start, the School of the 21st Century, and policies that support children. Upon leaving, he gave me a signed book, *Head Start: The inside story of America's most successful educational experiment* (Zigler & Muenchow, 1992). He wrote: "To Kimber Bogard, who is herself part of our nation's Head Start story. With my admiration, Ed Zigler." Even though I was not his student, nor did I work for him, Ed invested generously of his time and supported my education and career trajectory. Ed and I formed a relationship over many years and I solidified my desire to connect science to policy to improve children's lives.

In this paper we highlight how Ed's legacy is carried out today through our professional journeys that intersect with each other

and are guided by three lessons from Ed: (a) explore alternative career pathways and build the field; (b) start with the science and think application; (c) apply the knowledge and influence policy.

It is important to note the context in which we have written this paper, throughout most of 2020. In addition to living in the midst of the Covid 19 pandemic, which claimed over 213,000 lives in the USA by the end of October 2020<sup>1</sup>, significant economic and social changes are happening at a rapid pace, thus influencing the future of the country in ways that we will not fully understand for months and years to come. Economically, the USA has experienced unemployment rates that reached almost 15% in April 2020<sup>2</sup>. Socially, millions of people of all backgrounds worldwide have taken to the streets protesting police brutality and demanding racial justice after the killing of George Floyd by a Minnesota police officer.

In addition to the socioeconomic upheaval going on during 2020, Ruby Takanishi passed away on August 8, 2020. She made significant contributions to this paper and the lives and careers of many people. Ruby was my friend, colleague, and mentor for over 25 years, and I am deeply saddened by her passing. Ruby and Ed had a combined impact on the lives of millions of children throughout their careers.

### Explore Alternative Career Pathways and Build the Field

In his work as a researcher and scholar, applied scientist, policy analyst, social experimenter, and presidential appointee, Ed crossed boundaries to impact children's policies and programming. He validated and supported broadening the scientist's role to applied investigator, which allowed others to follow. Ed trained as a researcher and he chose to use research to inform policies that shape the contexts in which children grow, play, and learn. Ed built a field of applied scientists by example and through his influence on others.

Ed crossed boundaries from academia to the legislative and executive branches of government and back again. His work paved the way for others to apply research to policy and stimulated alternative career pathways. His influence was widespread and he led by example, mainly when few academics from the developmental sciences were involved with policy and programs. At the time, many in the field did not respect this approach to applying research knowledge (Zigler, 1998). Ed cleared the way, both directly through mentorship and indirectly, for those who followed in his footsteps in several ways. Specifically, Ed paved the way for academic researchers to use their tools and knowledge to inform public policy and social programming to improve the lives of children and families through fellowships on the Hill and the executive branch. For example, Ruby became an American Association for the Advancement of Science (AAAS) Society for Research in Child Development (SRCD) Congressional Science Fellow in 1980 to work on the US Senate Appropriations Committee, right after receiving tenure at UCLA. She then went to work in organizations outside of academia, whose missions included supporting social and behavioral science in policy (Takanishi, 2020).

Ed invested in students and early career professionals at Yale and outside of his academic institution across an entire ecology of organizations focused on connecting research to policy to build the field of applied researchers. He mentored people who

shared his vision for children. As many can attest, those relationships spanned decades. They contributed to a field of developmental scientists whose professional interest was to use their science to inform policy and make lives better for children. Ed kept his eye on the field's future and knew that mentoring the next generation through field building was key to ensuring the work would continue. This form of field building led to a more robust ecosystem for applying research to policy than only working from an academic base.

Ed's followers work in influencer organizations like private foundations and those with relationships with federal agencies and legislative committees that advance policy in select interest areas such as children. Professionals in these alternative careers employ research to inform policy. Some of the professionals that Ed nurtured work in organizations such as the National Academies of Sciences, Engineering, and Medicine (NASEM), the American Psychological Association, and the SRCD. Membership associations and national and state academies can leverage their members' expertise to inform policy and contribute to field building by supporting the next generation of applied scholars.

Combined, the authors have worked across many of these organizations, in addition to short stints in academia. Here, we highlight some of our professional experiences and Ed's influences in these types of organizations and describe how they play a crucial role in field building.

### Philanthropy as a lever for change

Ed's role in the grantmaking philanthropic world is not well known. To our knowledge, he did not write about it as extensively as he did regarding his role with governmental agencies and legislative bodies. Philanthropy is a field that can leverage resources to build areas of research with understudied populations and in support of early career scientists.

To assess Ed's influence within the philanthropic sector, it is important to describe that sector when he was active (late 1970s to early 1990s). The sector – particularly foundations focused on supporting grantees working on child and family policy issues – was different to what it is now is. Within that context, Ed played a strategic role because he had a rare understanding among academics about which opportunities could leverage relatively small private philanthropic dollars in contrast to then more considerable public funds. He was connected to philanthropists like Irving Harris, who not only sat on boards of directors of foundations like the Bush Foundation but also shared a deep interest in shaping policies regarding children and families. Ed also understood the importance of placing his students and mentees in foundations themselves.

In the late 1970s, philanthropy was a smaller sector in terms of the number of foundations and size of assets. The private philanthropic world and its workings were much less transparent than today, and accessibility was limited to an elite few. In terms of the people employed at foundations, they were more generalists than specialists in a field, and would reach out selectively to leaders in an area to inform and shape their grantmaking programs.

In the past 20 years or so, private philanthropy has changed significantly in numbers and the sheer size of assets, with their capacity to match or exceed declining public funds for children (First Focus, 2019). Efforts to make philanthropy more accessible and open to a larger number of potential grantees have been successful, but there is also more scrutiny and critique of the sector (Giridharadas, 2018). Foundation staff, specifically in foundations supporting child and family policies, includes individuals who

<sup>1</sup><https://www.cdc.gov/nchs/nvss/vsrr/covid19/index.htm>

<sup>2</sup><https://www.bls.gov/news.release/pdf/empisit.pdf>

have academic or professional training in related fields, including those with advanced degrees in developmental psychology, public health, and education.

We outline Ed's influence on philanthropy through advocating for the Bush Centers in Child Development and Social Policy through the Bush Foundation and advising private foundation executives. Ed influenced philanthropy through the Bush Centers to increase the number and quality of researchers conducting applied science and to inform policy. He also advised executives managing private foundations, which are levers for connecting science to social programs and policies. For example, Ed was an advisor to Ruby when she was at the Carnegie Foundation and the Foundation for Child Development (FCD).

In 2000, Ed recommended that I meet Ruby. I wanted to learn more about how philanthropy worked as a lever for change. A couple of years later, I worked at FCD as a practicum student and, later, as a freshly minted PhD in applied developmental psychology. Ruby taught me the power of using philanthropic funds to stimulate understudied fields of research and the importance of supporting early career researchers. I became aware of the power of philanthropy in field building and advancing an applied research agenda. For example, I administered a fellowship program focused on young children living in immigrant families. We supported early career scholars who studied this population of children and connected their learnings to policy design. A few decades earlier, Ed was laying the groundwork for the Bush Centers.

#### *The Bush Centers: creation and growth*

In his SRCDC oral history (Zigler, 2003), Ed describes a visit from the Bush Foundation donors in St. Paul, Minnesota, in the early 1970s, which led to the creation of four Bush Centers in Child Development and Social Policy. These centers were a significant contributor to growing the field of child development and policy. They laid the groundwork by increasing the visibility of the issues and focusing the training of researchers with interests in policy issues.

The Bush Centers were a significant philanthropic investment in the 1970s and 1980s, and a critical contributor to building the field of organizations and individuals with a commitment to linking rigorous research on children and families with child and family policy. In his oral history for the SRCDC, Ed describes a visit to Yale University by two members of the Bush family who were seeking his advice on child disabilities, a focus of Ed's research at the time. In his account of that visit, Ed proposed a network of centers across the country based in higher education. The centers would support and train graduate students interested in connecting research with policy. Before that time, there were no other centers or programs for those purposes. Instead, some individual academicians had such interests, some of whom served in federal agencies or consulted with federal grantmaking agencies such as the National Institutes of Mental Health. Networks were based on individuals and were not institutionalized.

With the support of the Bushes, foundation president Humphrey Doermann and program officer Stanley Shepard, the Bush Foundation supported four centers: at UCLA (Norma D. Feshbach and John I. Goodlad), The Frank Porter Graham Center at the University of North Carolina (James Gallagher), the University of Michigan at Ann Arbor (Harold Stevenson, mentor of Ed, and early advocate for research-informed policies), and at Yale University. Almost all of the individuals who had careers in the field – whether as university researchers, staff in

Congress, federal agencies, scientific societies, and foundations, and project directors of critical reports issued by the then National Academy of Sciences – were incubated in the four Bush Centers. Some combined their Bush experiences with being AAAS SRCDC Congressional Science Fellows, supported by the William T. Grant Foundation and the FCD, a program that began in the 1970s. Over the past 30–40 years, since the inception of the Bush Centers, these individuals constituted networks that led to lasting and significant outcomes for children and families. The Bush Centers prioritized more formal structures through regular convenings across the centers – in contrast to the Congressional Fellowship Program that struggled for three decades to do so and only recently has had dedicated staff to support the SRCDC Congressional and Executive Agency Fellows.

#### *A philanthropic advisor*

As in other sectors, Ed worked quietly and strategically in private philanthropy. He understood the opportunities and limitations of philanthropic funds and where they could matter. In the 1980s, while serving on the Smith Richardson board, Ed advised the A.L. Mailman Family Foundation in its formative stages (L. Lynch, personal communication, February 20, 2020). Both foundations supported grantees working on public policy issues. Ed also advised a Carnegie Corporation of New York task force that issued Starting Points – a precursor to the universal Pre-Kindergarten movement.

Lynch (personal communication, February 20, 2020) noted that, as an advisor to the A.L. Mailman Family Foundation, Ed would identify opportunities where Mailman funds could support pilot research that later would form the basis for larger-scale studies. He also advised providing “gap” support, such as in the Chicago Longitudinal Study (CLS), when public funds were not available at a crucial point in that research effort. Arthur Reynolds, the lead researcher of the CLS, now in its fourth decade of following the participants, noted that in 1991 a Mailman Foundation grant enabled the CLS to position itself for larger federal research support that followed. This is but one example of strategic leverage of private funds to fund a series of studies that provided the scientific basis for public support of early childhood programs.

Ed also recognized the power of research-based information shared with philanthropic staff, who were not experts themselves, to influence grantmaking agendas. The Mailman Foundation hosted annual symposia on early childhood education and care issues, including staff from foundations working in the area and researchers and professionals in early education. Topics included promoting quality in early education through standards and professional development, the critical role of family support strategies in early education, and creating systems of care for infants and toddlers. These efforts identified opportunities for working with state agencies to improve access and quality of early learning programs, and all topics continue to be salient in 2020 (L. Lynch, personal communication, February 20, 2020). Given his extensive experience in federal agencies and with legislative bodies, Ed cautioned that, even with research-based policy efforts, there was no guarantee of legislative success in the world of politics (Lynch, 2020).

Ed spoke at symposia aimed at leveraging foundation funds and advised other foundation leaders to create a shared understanding of the issues among funders and how philanthropic funds could address them. The Carnegie Corporation of New York, the FCD, and other child- and family-focused

foundations held similar forums. These forums were important before the rise of the internet, professional staffing of foundations, and less developed access to research than is currently the case.

Ed recognized that the placement of child development researchers as staff of foundations was a way of shaping the field of child development research and public policy. He understood the influence of networks of individuals, which were fostered by the Bush Centers and their network building potential. His students and mentees, some trained in the Bush Centers, have served on foundation staff and foundation boards over the past 20 years. They supported the connections between research and public policy through foundation grantmaking initiatives and continued to build the field itself.

### *The Foundation for Child Development (FCD)*

Before her work at the FCD, Ruby worked at the Carnegie Foundation as the Carnegie Council's founding executive director on adolescent development (1986–1996). In the following 16 years, she led the FCD as the fifth president. She shaped the foundation's plan around three guiding principles: (a) small amounts of funding can be effective; (b) fund what the public and private sectors can't or won't support; (c) fund overlooked areas (Takanishi, 2020).

Ed provided guidance and advice to Ruby throughout her tenure as president of the FCD. Since the FCD had limited funds compared with other foundations and public investments in children, Ruby benefitted from Ed's vision of using limited private dollars to stimulate more substantial investments in children. Ruby led the foundation in critical areas that produced at least two fields of research and practice. The Young Scholars Program supported a network of early career researchers to build a nascent science base providing evidence on the education of children living in immigrant families. Ruby often spoke about the lack of research to guide practice and policy with this population of young children. In her work, Ruby pointed to her experiences growing up in an immigrant family and the assets that children bring to their educational and community settings, particularly when they are dual-language learners. The FCD had supported 40 young scholars by the end of Ruby's tenure.

The PreK–3rd movement is another initiative that Ruby developed, focused on bridging the early years with the early grades to provide continuity and alignment in children's educational experiences. The core concept of PreK–3rd is that schools and classrooms are structured in ways that acknowledge and support children's optimal development. Ruby emphasized teacher preparation and ongoing professional learning as crucial for ensuring a qualified workforce to educate young children (3–8 years old) and form a solid foundation for future learning.

I worked on the PreK–3rd agenda while a postdoctoral fellow at the FCD and conducted my dissertation on the topic (Bogard, 2006). A couple of years later, I took a position at the National Academies to lead the Board on Children, Youth, and Families (BCYF) with strong support from Ruby. The National Academies bring together science and policy recommendations to inform federal and state governments and the broader field to shape the contexts and settings to support human growth, development, and wellbeing.

### *State-level and national academies*

Academies have the power to influence policy with their elected memberships and scientifically grounded positions. Academies

can build partnerships, produce research findings, develop policy recommendations, provide technical assistance, and communicate results to both decision makers and communities. Both the New York Academy of Medicine (NYAM) and the National Academy of Medicine (NAM) have memberships of over 2,000 experts each across multi-disciplinary fields that contribute to health and wellbeing. Members are nominated by their peers and, after a rigorous review process, are elected into the academy. These institutions, which are both over 150 years old, have played significant roles in advancing policy agendas throughout their history.

### *The New York Academy of Medicine (NYAM)*

My role at NYAM as the senior vice president for strategy and programs involves leading the organization's strategic visioning and providing oversight to grant- and contract-funded programs. My move from the NAM – where I launched and ran global and national programs and oversaw the production, publication, and dissemination of over 20 reports – to a state-level academy allowed me to work more deeply in communities impacted by structural and institutional systems of inequity. The move allowed me to have a more intimate understanding of the barriers that prevent families and children from living a healthy life and the assets they access to survive and sometimes thrive. These learnings helped shape the future direction of NYAM.

NYAM is in East Harlem, a culturally vibrant community in upper Manhattan. There are challenges here, with 50% of children living in poverty and significant rates of gun violence, which typically take the spotlight and make invisible the community and family assets that exist to support children. After listening to the community for almost a year when I returned to New York City from Washington, DC to work at NYAM, I realized that parents were not at the decision making tables. There was a lot of deficit talk, without acknowledging the strengths and assets in the families and communities who were targets for intervention.

My training in developmental psychopathology at Teachers College Columbia University, with Suniya Luthar, taught me about how families and children experience a combination of risk, protective factors, and resilience. I learned that families should not be viewed solely in terms of risks, for example. It is the combination of risk and protective factors that produce resilience, and structural and institutional systems play a significant role in children's developmental trajectories (Luthar, Burack, Cicchetti, & Weisz, 1997). People's stories are also important. Ed believed that parents' and children's stories were essential to bring to life the issues facing families living in low-resource settings.

Ed excelled at telling stories to bring the science to life, according to Pat DeLeon, who worked with Senator Daniel K. Inouye for 38½ years and retired as his chief of staff (P. DeLeon, personal communication, March 1, 2020). Stories have the power to inform nonscientists with decision making power. Ed believed that parents, served by policies and programs, need to influence a cycle of improvement for services. The 1967 Head Start policy manual laid out roles for parent involvement, including decision making in the program's operations and parent employment in the classroom. The parent involvement policy was further fleshed out in 1970 to clarify parents' decision making power when Ed led the Office of Child Development (Zigler & Muenchow, 1992).

Parent-driven policy reform was at the core of a new program launched at NYAM in 2019. I led a team to develop a concept that would bring caregivers of young children to the policy table. They spoke about their hopes, dreams, and challenges raising young



children in economically constrained environments and they informed policy change. This resident-led community-based program is called the East Harlem Action Collaborative for Child Health and Well-being (EHAC).

#### *East Harlem Action Collaborative for Child Health and Well-being (EHAC)*

EHAC is a pilot program to test the feasibility of a community resident-driven program that guides research, policy, and practice. Community residents define issues to address in the community, identify formal and informal community assets, review available data and research on the topics selected, collectively set goals, and propose solutions to key decision makers. They define child health and wellbeing and identify culturally aligned measures to implement in the community. Through the EHAC program, we brought partners on board from several community organizations, engaged the local community board, and communicated frequently to key decision makers. Ruby was on the technical advisory group alongside a multi-disciplinary list of scholars, including Rosanne Flores, Angela Diaz, LaRue Allen, Kevin Fiore, Danielle Laraque Arena, and Efen Aguillar.

The recruitment strategy for community residents caring for young children included going door to door with flyers in government-subsidized developments to recruit mothers and grandmothers to participate. The EHAC team worked to put parents and grandparents in the lead to shape the research agenda on measuring child health and wellbeing, inform and disseminate community resources, and strengthen resident leadership capacity. After proving that a state-level academy, with a long and storied past with the community, could come together with community residents to shape a research and policy agenda and identify resources that serve children, we were able to expand the program's reach in East Harlem. The program model is being adapted with Head Start and Early Head Start parents in collaboration with government agencies overseeing early childhood education.

The lessons we learned and continue to learn, mainly working closely with community residents, has informed the strategic direction of NYAM to more intentionally engage community residents, our members, and technical advisors to inform our research and public programming. While bold, an organization that can shift power to the community allows space for shared decision making that is more relevant to the needs of the populations impacted. The lessons that we learned from the EHAC project have informed an organizational transformation about shifting power while more fully engaging the community to significant impact.

#### **Start with the Science and Think Application**

I don't think it is possible to apply developmental science to educational settings without really engaging in these settings. – Ruby Takanishi

Ed had a deep respect for science and understood both the power and limitations of the role of science in policy and program development. When I first met Ed at Yale, as I was contemplating my graduate studies, he encouraged me to work with Jeanne Brooks-Gunn and Suniya Luthar. With Brooks-Gunn, I coded interactions between parents and children in Head Start and Early Head Start programs. With Suniya, I learned about a population that was understudied – affluent adolescents. Through studying people growing and developing in different contexts –

from poverty to wealth and across the developmental spectrum from early childhood through adolescence – my appreciation of contextual influence on development increased. I learned that while both populations lived in contexts that placed their development at risk, there was also the potential to change the risk trajectories through scientifically informed interventions. It was imperative to start with science, but also to think about its application.

Ed firmly believed that knowledge should not be kept in journals or the halls of academia. Instead, it should be used to develop and implement policies and programs to create better life opportunities for children, their families, and their communities. Ed frequently recounted the power of programs in his childhood (Zigler, 2003). Ruby and I both crafted our professional careers on the belief that evidence-informed policies and programs matter for children, youth, families, and communities.

#### *School-based research, implications for application*

Ed viewed Head Start as a laboratory to continue to learn and refine practices to improve the quality of early education for children. Much to Ed's dismay, Head Start was not piloted with a small group of children to test and evaluate it before its full implementation in the summer of 1965 (Zigler & Styfco, 2002). The Head Start program was rolled out to more than half a million children within months. Later, research and evaluation became part of the national Head Start program, and the findings led to continuous quality improvement efforts. The idea that Head Start programs could be labs for studying and informing improvements in practice provided the necessary precedent for my dissertation that tested the hypothesis that schools applying developmental science across the early years of a child's life would lead to improved educational outcomes for children from low socioeconomic backgrounds (Bogard, 2006).

#### *The PreK–3rd approach*

During my practicum at the FCD from 2004–2006, I conducted my dissertation on a PreK–3rd approach to education. PreK–3rd was the brainchild of Ruby and approved for a 10-year investment by the board members. The scientific foundation for the PreK–3rd approach included aligning how children are taught in early childhood programs and schools with developmental science. The policy implications included maximizing investments in education and informing practice applications from teacher education to teaching and learning in the classroom. Specifically, the PreK–3rd approach recognizes the ages of 3–8 years as fundamental in building learning skills outside of home environments and the importance of teachers (Bogard & Takanishi, 2005).

Developmental science points to several competencies that are necessary for children to attain school success. These include motivation, social skills, executive functioning, and problem solving (Zigler, Abelson, Trickett, & Seitz, 1982). Ideally, teachers trained specifically to support children's skills in these areas and across the age range from 3 to 8 years old will understand different rates of development and how to best scaffold individual children's growth.

Early research points to the importance of supportive adults in children's lives to promote stability (Ainsworth, 1978; Bowlby, 1982). Robert Pianta and colleagues built upon this research and tested it in early childhood classrooms (Pianta, La Paro, Payne, Cox, & Bradley, 2002). More recently, the importance of adults, specifically caregivers and teachers, in children's lives has

been confirmed in National Academies' consensus reports (Institute of Medicine & National Research Council, 2015; NASEM, 2016, 2019a, 2019b). Relatively new work by Luthar and colleagues indicates supporting caregivers through authentic connections with other caregivers (Luthar, Kumar, & Benoit, 2019).

Building on the science base, the key components of a PreK–3rd approach to educating young children can be divided into structural and process elements (Bogard, 2006). The structural components include: (a) quality teacher preparation and ongoing professional development; (b) access to early childhood education starting at age 3 years; (c) small class sizes to allow for individual attention; (d) family engagement and wrap-around services; (e) alignment and coordination of standards, curriculum, and assessments within and across grade levels.

The process components in the PreK–3rd approach focus on: (a) integration of children from diverse backgrounds and with different abilities; (b) strong principal leadership that ensures fidelity of implementation across grade levels; (c) supportive and positive work environments that result in high teacher satisfaction; (d) high-quality instruction with less time dedicated to disciplinary practices; (e) responsive teacher–student interactions; (f) individual attention to students.

### *Studying the model*

While public investments in early childhood education programs continued to climb in the early 2000s due to positive findings from programs such as the Tula Pre-K Program (Gormley, Gayer, Phillips, & Dawson, 2005), the Chicago Child–Parent Centers (Reynolds, Ou, & Topitzes, 2004), the Abecedarian Project (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002), and the High Scope Perry Preschool Program (Barnett, 1995), there was a lack of attention to alignment and coordination with grades kindergarten through third grade, thus risking the early investments (Heckman & Masterov, 2007). Ed wrote about developmental continuity and investments to continue supporting children's cognitive, affective, and behavioral health and development into the early grades in the 1970s. However, little research was conducted to test how to best structure the school environment to support what we know about child development from developmental science (Zigler, 1978).

To evaluate the effectiveness of aligning children's experiences in the classroom and across grade levels with what we know about how children learn, grow, and develop requires data from multiple sources. The data need to reflect school leadership, school organization and policies, teacher preparation and classroom structure, and classroom quality across grade levels from pre-kindergarten through third grade. With the support of Ruby and my dissertation mentor Stephanie Jones (a student of Ed's), I designed a comparative study across three schools to further explore and refine the PreK–3rd approach to education and inform school district-wide policy. I focused on alignment and coordination of teaching and learning across grade levels from the structural components and teacher–student interactions at the proximal level as process components. Using administrative data on school achievement, I selected three school types (far above average, above average, and average in relation to the school district average) and assessed structural and process components within each school to determine fit with the PreK–3rd approach.

I employed a mixed-methods design to document how learning was systematically organized and implemented across grade levels. The central hypothesis was that variations in fit with specific, measurable components of the PreK–3rd approach would

be related to student achievement, measured at the school level by fourth-grade proficiency in English language skills and math. Interviews with teachers and principals provided data on alignment characteristics within and across grade levels, principal leadership in coordinating curriculum and assessments across grade levels, and teacher qualifications and years of experience. Classroom instruction was assessed with the Classroom Assessment Scoring System (La Paro, Pianta, & Stuhlman, 2004), and class size and student:adult ratios were documented.

The findings showed that principal leadership is key to setting the vision and communicating the plan for achieving the goals. In the far above average school, the principal left no child behind and provided resources to support students before and after school. Moreover, this school demonstrated the best fit with the PreK–3rd approach, particularly by way of structure and a system for aligning and coordinating classroom instruction, curriculum, and assessments with students' developmental levels and abilities. The average school demonstrated no alignment and coordination components, and the above average school fell in between the far above average and average schools, as predicted.

Structural components measured in the study, such as class size, pre-service training, and years of teaching experience, showed no direct correlation to school achievement. Interestingly, specialized teacher training was related to the instructional climate in the lowest performing school. This finding points to school context as a potential area for increased research, specifically how the adults in classrooms are supported in the school environment's broader context. Similarly, how teaching is organized across grade level, particularly for struggling students, had more of an impact on classroom instruction than years of teaching experience. For example, the far above average school set aside time for teachers to meet in team-oriented action meetings to discuss and plan around different populations of struggling students, with the goal of third-grade success. This finding suggests that school organization, particularly alignment and coordination across grade levels, plays a role in student learning via instructional practice.

Applying the knowledge that I learned and testing additional hypotheses to flesh out the PreK–3rd approach is a pathway that I would have chosen had I decided to pursue an academic career. Bringing scientific rigor to programs and policies in education could be one of the most important ways to improve childhood trajectories that span a lifetime. My dissertation shed light on the fact that most inner-city, economically disadvantaged students are educated in schools like the lowest performing school, which was considered average (Hauser-Cram, Warfield, Stadler, & Sirin, 2006; Takanishi, 2016). Less than 30% of the students in this school achieved proficiency in English language skills by fourth grade. In the same city, serving a similarly economically disadvantaged student body, the highest performing school reported over 60% proficiency in English language skills. Thus, schools can be organized to support student achievement when instruction is aligned with developmental needs and capabilities and is coordinated across grade levels. However, the science needs to be applied, and a commitment to continuous research and evaluation must be embedded in the process of constant improvement. These are two points that Ed advocated in his work, particularly with Head Start.

### **Apply the Knowledge and Influence Policy**

Knowing is not enough; we must apply. Willing is not enough; we must do. – Johann Wolfgang von Goethe

Ed was a master in applying the science and knowledge of societal needs to program development and implementation. There are numerous ways that he accomplished this, with programs such as Head Start, Home Start, the Child and Family Resources Program, the School of the 21st Century, and the Child Development Associate program and credential (Zigler & Berman, 1983; Zigler, Finn-Stevenson, & Stern, 1997). The art of employing research in the service of program design and public policy can be learned and reinforced through practice by presenting science to decision makers. Developing programs grounded in the evidence, knowledge of what works to advance child well-being, and conducting evaluations and policy analyses are necessary but not sufficient to make a case for resource allocation and sustained funding. Ed knew that there was a need to drive the political will to continue evidence-informed programs for children. As an influencer on the Hill, Ed often spoke to elected officials and said he was not a Democrat or Republican, saying “My party is kids.” Policy is not politics, although the latter influences the former. Without getting involved in *politics* and remaining focused on bridging science to *policy*, Ed remained a trusted advisor throughout his career.

Bridging science to policy is more than the right statistic. It is about trust and communication. Ed understood that policy was about relationships, building trust, and packaging the science in a way that could be easily digested (P. DeLeon, personal communication, March 1, 2020). Ed frequently testified at congressional hearings. He listened to what policymakers wanted and needed and packaged the information in a way that was helpful to make decisions (DeLeon, 2020). Pat DeLeon pointed out that scientists who were most successful on the Hill understood their audience and spoke to them in a way that they could use the information. Those who presented lots of statistics and data points were less successful. (P. DeLeon, personal communication, March 1, 2020). In my role at NASEM, I put these lessons into practice.

### *The Board on Children, Youth, and Families (BCYF)*

In 2011, I became the director of the BCYF at the National Academies’ Institute of Medicine. In this role, I had the opportunity to work with some of the best scholars in research, policy, and practice throughout the USA and globally to advance science-driven policy recommendations. The director can develop a strategy and plan with an advisory board – our strategy was to produce highly visible consensus reports with expert committees that would summarize the state of the science, make influential recommendations for large numbers of children, and ensure robust communication and dissemination of the findings and recommendations.

To maximize the number of children potentially impacted, our team selected topics that had broad stakeholder audiences. Choosing issues to focus on relevant to federal agencies and policymakers was just the first step. Finding the resources to conduct the work and developing the committee’s statement of task were more difficult and time consuming. I soon realized that Ed’s advice about relationship building was vital to succeed in this role.

Ed knew that to get the ear of key decision makers you had to take the time to build relationships. Relationship building was the key to success for many of our projects and reports. For one of our most successful reports, I brought together three federal agencies and several private foundation partners. Together, we developed the statement of task. After about 20 months, the result was a series of recommendations for one of the largest and most

complex workforces in the USA – the early childhood workforce for children from birth to age 8 (Institute of Medicine & National Research Council, 2015).

### *The early childhood workforce*

Three federal agencies came together to support the early childhood workforce committee’s work. They were the US Department of Education, the US Department of Health and Human Services Administration for Children and Families, and the US Department of Health and Human Services Health Resources and Services Administration. Several private foundations also joined forces to support the report<sup>3</sup>. We found common ground on a statement of task to move forward with a consensus report that would update the science on children from birth to age eight, building on the groundbreaking report *From neurons to neighborhoods* (National Research Council & Institute of Medicine, 2000), and guide policy decisions.

The task statement included several questions, and the answers would guide policies and resource allocation for programming at federal, state, and local levels. The charge to the volunteer committee, chaired by LaRue Allen, was to “... prepare a consensus report on how the science of children’s health, learning, and development from birth through age 8 can be employed to inform how we prepare a workforce to seamlessly support children’s health, development, learning, and school success ...” (Institute of Medicine & National Research Council, 2015, p. 22). Based on the available evidence, the committee was charged with developing evidence-based recommendations on: (a) the skills, knowledge, and abilities that adults working with children need to fully support young children’s health, learning, development, and school success; (b) staff structure and qualifications of educators to support learning across a developmental continuum from birth to age 8; (c) how to assess children and use data to inform teaching and learning.

Several key policy recommendations were made that re-envision the systems and policies supporting children, grounded in what we know from science. One controversial recommendation in the report states that all early childhood teachers working with children birth to age 8 should have a Bachelor of Arts (BA) degree. The committee reviewed the evidence involving the complex skills and abilities that educators need to support young children. They determined that nothing short of a BA in early childhood education would be able to meet these needs. The committee acknowledged the challenges with this work, the need for ongoing professional training, and the critical role of leadership to be successful. Other recommendations address higher education, evaluation and assessment of professional practice, interprofessional practice, support for implementing the recommendations and oversight, and building the knowledge base.

The first question that someone asked at the report’s release was about paying for upskilling the workforce across the country. Fortunately, we had planted the seed for the second report with earlier discussions in anticipation this would be the next bridge to cross to continue to strengthen early childhood systems for children. The report, *Transforming the financing of early care and education* (NASEM, 2018), also chaired by LaRue Allen, was published three years later and put forth several policy options to pay for a highly qualified early childhood workforce.

<sup>3</sup>The Bill and Melinda Gates Foundation, David and Lucile Packard Foundation, Robert R. McCormick Foundation, and W.K. Kellogg Foundation came together with the federal agencies to provide the resources necessary to produce the report.



Through another combination of federal agency and private foundation support, we launched two additional reports to round out the state of the knowledge of young children. The reports put forward policy recommendations to improve the lives of millions of children living in marginalized situations. One study focused on dual-language learners and the other on parents of young children. Ruby was the chair of the former study committee, and Vivian Gadsden the chair of the latter.

#### *Dual-language learners*

Ruby expertly led the committee that produced the report *Promoting the educational success of children and youth learning English: Promising futures* (NASEM, 2017a). Key findings included the cognitive, social, cultural, and emotional developmental assets of being proficient in both a home language and English, and the challenges currently facing schools in capitalizing on these assets to promote learning. The committee highlighted promising practices from the literature and developed policy recommendations. They suggested that federal agencies with oversight responsibility for early childhood programs require evidence-based programs and practices, and included validated methods and tools for assessing dual-language learners. The committee highlighted special populations (such as dual-language learners with disabilities and gifted students) as being left out of screening and identification for appropriate supports and services. Other recommendations included ensuring that indigenous language instruction is maintained when working to increase English language proficiency and requiring all education directors and lead teachers working with dual-language learners in pre-kindergarten to twelfth grade to obtain a BA degree with certification to teach dual-language learners.

#### *Parents of young children*

*Parenting matters: Supporting parents of children ages 0–8* (NASEM, 2016) rounds out the set of reports to inform policies to improve children's life trajectories in the USA and beyond. The committee's charge was to review the research on parent knowledge, attitudes, and practices that support healthy child development. The findings from the literature informed the committee's recommendations for policies to strengthen the capacity of parents of young children. Specific questions in the statement of task targeted the science on parent engagement and evidence focused on universal, targeted, and intensive levels to inform potential investments in systems and programs that build on family assets and remove potential barriers. Key recommendations highlighted pathways to access evidence-based interventions and opportunities for scaling programs. In addition, the committee made recommendations to support research with parents who have special needs (such as mental illness, substance abuse, and intimate partner violence) and to strengthen the evidence base on fathers.

Whereas we have decades of research indicating that the proximal relationship between a child and primary caregiver is vital for healthy development, applications of this knowledge are less prominent. The caregiver operates in and is influenced by a broader context that affects their ability to care for and nurture young children (Bronfenbrenner, 1979). Therefore, focusing on contextual influences, both supports and barriers, can lead to targeted policies that promote caregiver wellbeing. Caring for the caregivers is an important concept that is often lost in policy debates about children. The message is clear in both the *Transforming the workforce* report (Institute of Medicine &

National Research Council, 2015) and the *Parenting matters* report (NASEM, 2016) – policies must consider the caregiving and education contexts where young children grow and develop to maximize developmental outcomes. The implication is that support for caregiver wellbeing is critical.

These four reports provide a blueprint for policies and practices that can shape the lives of children and families by improving the conditions in which they grow and develop, with particular attention on the health and wellbeing of caregivers at home and in school.

#### *Innovation to Incubation at the National Academy of Medicine (NAM)*

Ed believed that science is a public good and must be applied to improve lives. Whereas Ed managed to apply scientific knowledge to programs and policies, it is not common in academia. The NASEM are also not generally considered organizations for application of the science. They specialize in consensus reports that provide evidence-based recommendations for others to implement. After a few years as the director of the BCYF orchestrating several consensus studies, I realized that we could be doing more as an organization to bridge science to policy and practice, specifically at the state level. I pitched the idea that there was an opportunity space at the National Academies that could be capitalized upon, given our intellectual knowledge of complex consensus reports that our committees produced and our neutral convening power. The idea was to take the innovative recommendations from the consensus reports and convene stakeholders to incubate plans for implementation at the state level.

Just a couple of years into his new presidency at the newly formed NAM (formerly the Institute of Medicine), Dr Victor Dzau agreed to pilot a new program called Innovation to Incubation (i to I). In 2015, I worked with staff at NAM on the i to I program. We started with the recommendations from the *Transforming the workforce* report (Institute of Medicine & National Research Council, 2015) and five teams from California, Washington, Virginia, Illinois, and Washington, DC. We also pulled together over 20 national organizations to agree on a set of principles and new ways to align their work and collaborate to serve the workforce (Adams et al., 2017).

In two subsequent years, we had the opportunity to work with five additional teams from Minnesota, Nebraska, Colorado, Indiana, and New York. These ten states created ten implementation plans grounded in the report's recommendations. Each plan was reflective of and considered the context in each state, and each team selected the recommendations from the report that they wanted to move forward. Teams typically included members from the state department of education, health department, academia, and advocacy organizations. Many of the teams continued to advance the implementation of their action plans even after the project ended. In this way, the National Academies served a catalytic role in connecting science to policy action in order to strengthen structures and systems for children. The template used to develop action plans at the state level was used for action plans at the community level through the Culture of Health Program (CoHP).

#### *The Culture of Health Program (CoHP) at the NAM*

Alongside an advisory committee, we planned and operated the CoHP funded by the Robert Wood Johnson Foundation. About



1 year into the 5-year grant, I began managing the CoHP to produce actionable knowledge. Products included a series of consensus reports, communications tools, and a network of community representatives and researchers from across the USA.

As part of the initial \$10 million grant, the first consensus study aimed to examine the science of health disparities and their root causes in the USA. The committee lifted up critical elements of promising solutions to inform a set of recommended strategies for communities to advance health equity. The report, *Communities in action: Pathways to health equity* (NASEM, 2017b), puts health equity on the map with clear definitions and root causes of inequities that persist in the USA. The committee reviewed the core issues of unequal access to resources and how power is allocated. The committee concluded access and power were the factors underlying conditions that perpetuate the marginalization of people living in low-resource settings.

The committee centered communities as actors who have the agency to promote health equity at the local level. They made policy recommendations to ensure community empowerment to make a difference in mitigating adverse effects on health by examining and improving environmental, social, and economic conditions. A key takeaway from the report is that poverty, discrimination, and structural racism are the root causes of inequities in the USA and must be addressed so that everyone can live a healthy life. We launched two additional studies grounded in the foundational report. They spanned the developmental spectrum from birth through late adolescence and focused on achieving equity for all kids.

As a trained developmental psychologist managing the CoHP at the NAM, I felt it was my duty to provide a platform for bridging the science on child and adolescent development to policy and practice. Building on the findings from the initial report, two consensus committees identified policy and practice recommendations that could improve the lives of children and youth who are typically marginalized. The report, *Vibrant and healthy kids: Aligning science, practice, and policy to advance health equity* (NASEM, 2019b), brought together the science on children who bear the brunt of health inequities. The committee made recommendations for cross-sector alignment, collaboration, and coordination to address the root causes of suboptimal developmental trajectories and improve programs with services from prevention to tertiary intervention.

The committee took a life course approach to review the science and therefore examined life stressors during the preconception and prenatal periods and their impact on child health and development. In addition, this report reinforces the importance of caregivers in reducing the effects of stressors on young children by creating supportive and stable caring environments at home and in early care and education settings. The authors call out subgroups of children who experience incredibly difficult contexts that need special attention. These children include those separated from their parents due to incarceration or foster care and children experiencing significant pressure to achieve, which is a situation experienced in relatively affluent communities (Luthar, Barkin, & Crossman, 2013; Luthar, Kumar, & Zillmer, 2019). The committee recommended supporting caregivers through expanding home visiting programs, increasing the number of community-based programs that provide psychosocial care to adult caregivers, and routine tracking of social risk among mothers and children over time in health care settings.

The third report in the CoHP series is *The promise of adolescence: Realizing opportunity for all youth* (NASEM, 2019a).

Through their research, the committee highlighted that adolescence is a period of development that offers an opportunity to alleviate harms inflicted in early and middle childhood. The committee also recognized that the “promise of adolescence” could also be limited for many youths in the USA today because of social, economic, and cultural factors, including discrimination and bias, limiting access to needed supports in the community.

The committee focused on several systems (foster care, health, juvenile justice, education) that influence developmental trajectories, particularly for youth who are multi-systems involved. The committee highlighted implicit bias in research, policies, and programs across systems. For example, the unequal distribution of resources in the education system led to a recommendation to level the playing field by rectifying disparities and supporting schools with economically disadvantaged students. The committee also recommended addressing racial and ethnic disparities in the child welfare system. The committee’s recommendation for better collaboration across the systems should be tempered by the finding that the systems are inherently biased.

One tactic that the committee used during its deliberations, in addition to examining the science, was listening to youth who were considered at risk for suboptimal developmental outcomes. Listening to and incorporating the voices of people most impacted by the work of researchers and decision makers is a step towards broadening access and power to decide where resources are allocated to make a difference. This approach can also be viewed as solidifying the promise of adolescence, strengthening the role of caregivers, and empowering communities.

## Conclusion

Caring, passionate, generous, trailblazing – these are the terms that come to mind when I think of Ed Zigler and his influence on me and my professional career. As his symbolic granddaughter, as he liked to call me, I aim to carry Ed’s “genes” into the future. Ed built a network of other mentors for me who would support me throughout my career. Through Ed’s specific recommendations about whom I should connect with and Ruby’s expansive network, I found Suniya Luthar, Margaret Beale Spencer, Valerie Maholmes, Patrick DeLeon, Larry Aber, LaRue Allen, Ann Masten, Stephanie Jones, Lonnie Sherrod, Velma McBride Murry, Jeanne Brooks-Gunn, Martin Sepulveda, Cheryl Polk, Vivian Gadsden, David Lawrence Jr., Michael Cohen, Marty Zaslow, Rosanne Flores, and Elena Nightingale, among many others. These individuals taught me about leadership, deepened my understanding of the connections between science and policy, and encouraged me to continue working to improve conditions for children to thrive. Moreover, I was steeped in the fertile soil of *giri* and continue to invest in the next generation of researchers, scholars, and practitioners to make the world a better place for children, their families, and communities. Ruby summed it up beautifully, saying

So what I have tried to do is to give back – to increase the opportunities for other individuals to do the kind of work that I do. We want all young people who choose to have influential lives to succeed because many more are needed to assure that all our children have better futures than they do now. (Higgins-D’Alessandro & Jankowski, 2002, p. 27)

Rest in peace, Ed and Ruby, and know that your legacies live on through all the people you have invested in, encouraged, and believed in over decades – *kodomo no tame ni*.

## Dedication

This paper is dedicated to the memory of Ruby Takanishi.

**Acknowledgments.** The authors gratefully acknowledge Patrick DeLeon, Luba Lynch, Martha Zaslow, Walter Gilliam, and Matia Finn-Stevenson for talking with us about Ed's influences on the field, and Suniya Luthar for comments on a previous version of this manuscript.

**Financial Statement.** This research received no specific grant from any funding agency, commercial or not-for-profit sectors

**Conflicts of Interest.** None.

## References

- Adams, D., Bornfreund, L. A., Carinci, J. E., Connors-Tadros, L., Fraga, L., Guarino, A., ... Williams, V. (2017). *A unified foundation to support a highly qualified early childhood workforce*. Washington, DC: National Academy of Medicine.
- Ainsworth, M. D. S. (1978). The Bowlby–Ainsworth attachment theory. *Behavioral and Brain Sciences*, *1*, 436–438. doi:10.1017/S0140525X00075828
- National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: The National Academies Press. doi:10.17226/9824
- Barnett, W. S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *The Future of Children*, *5*, 25–50. doi:10.2307/1602366
- Bogard, K. L. (2006). *Testing a PK-3 approach to education in three urban public schools*. (Doctoral dissertation, Fordham University). Publication No. AAI3216905, ETD Collection for Fordham University, <https://research.library.fordham.edu/dissertations/AAI3216905>
- Bogard, K., & Takanishi, R. (2005). PK-3: An aligned and coordinated approach to education for children 3 to 8 years old. *Social Policy Report*, *19*, 1–24. doi:10.1002/j.2379-3988.2005.tb00044.x
- Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*, 664. doi:10.1111/j.1939-0025.1982.tb01456.x
- Bronfenbrenner, U. (1979). *The ecology of human development*. Boston, MA: Harvard University Press.
- Campbell, F. A., Ramey, C. T., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science*, *6*, 42–57. doi:10.1207/S1532480XADS0601\_05
- First Focus. (2019). *The Children's Budget 2019*. Washington, DC: First Focus on Children.
- Giridharadas, A. (2018). *Winners take all: The elite charade of changing the world*. New York, NY: Alfred A. Knopf.
- Gormley, W. T. Jr, Gayer, T., Phillips, D., & Dawson, B. (2005). The effects of universal pre-K on cognitive development. *Developmental Psychology*, *41*, 872–884. doi:10.1037/0012-1649.41.6.872
- Hauser-Cram, P., Warfield, M. E., Stadler, J., & Sirin, S. R. (2006). *School environments and the diverging pathways of students living in poverty*. In A. C. Huston & M. N. Ripke (Eds.), *Cambridge studies in social and emotional development. Developmental contexts in middle childhood: Bridges to adolescence and adulthood* (pp. 198–216). New York, NY: Cambridge University Press. doi:10.1017/CBO9780511499760.011
- Heckman, J., & Masterov, D. V. (2007). *The productivity argument for investing in young children* (NBER Working Paper 13016). Cambridge, MA: National Bureau of Economic Research.
- Higgins-D'Alessandro, A., & Jankowski, K. R. (2002). *Science for society: Informing policy and practice through research in developmental psychology*. San Francisco, CA: Jossey-Bass.
- Institute of Medicine, & National Research Council. (2015). *Transforming the workforce for children birth through age 8: A unifying foundation*. Washington, DC: The National Academies Press. doi:10.17226/19401
- La Paro, K. M., Pianta, R. C., & Stuhlman, M. (2004). The classroom assessment scoring system: Findings from the prekindergarten year. *The Elementary School Journal*, *104*, 409–426. doi:10.1086/499760
- Luthar, S. S., Barkin, S. H., & Crossman, E. J. (2013). "I can, therefore I must": Fragility in the upper-middle classes. *Development and Psychopathology*, *25*, 1529–1549. doi:10.1017/S0954579413000758
- Luthar, S. S., Burack, J. A., Cicchetti, D., & Weisz, J. R. (Eds.). (1997). *Developmental psychopathology: Perspectives on adjustment, risk, and disorder*. New York, NY: Cambridge University Press.
- Luthar, S. S., Kumar, N. L., & Benoit, R. (2019). Toward fostering resilience on a large scale: Connecting communities of caregivers. *Development and Psychopathology*, *31*, 1813–1825. doi:10.1017/S0954579419001251
- Luthar, S. S., Kumar, N. L., & Zillmer, N. (2019). High achieving schools connote significant risks for adolescents: Problems documented, processes implicated, and directions for interventions. *American Psychologist*, doi:10.1037/amp0000556
- NASEM. (2017a). *Promoting the educational success of children and youth learning English: Promising futures*. Washington, DC: The National Academies Press. doi:10.17226/24677
- NASEM. (2017b). *Communities in action: Pathways to health equity*. Washington, DC: The National Academies Press. doi:10.17226/24624
- NASEM. (2018). *Transforming the financing of early care and education*. Washington, DC: The National Academies Press. doi:10.17226/24984
- NASEM. (2019a). *The promise of adolescence: Realizing opportunity for all youth*. Washington, DC: The National Academies Press. doi:10.17226/25388
- NASEM. (2019b). *Vibrant and healthy kids: Aligning science, practice, and policy to advance health equity*. Washington, DC: The National Academies Press. doi:10.17226/25466
- NASEM (National Academies of Sciences, Engineering, and Medicine). (2016). *Parenting matters: Supporting parents of children ages 0–8*. Washington, DC: The National Academies Press. doi:10.17226/21868
- Pianta, R. C., La Paro, K. M., Payne, C., Cox, M. J., & Bradley, R. (2002). The relation of kindergarten classroom environment to teacher, family, and school characteristics and child outcomes. *The Elementary School Journal*, *102*, 225–238. doi:10.1086/499701
- Reynolds, A. J., Ou, S. R., & Topitzes, J. W. (2004). Paths of effects of early childhood intervention on educational attainment and delinquency: A confirmatory analysis of the Chicago Child-Parent Centers. *Child Development*, *75*, 1299–1328. doi:10.1111/j.1467-8624.2004.00742.x
- Takanishi, R. (2016). *First things first! Creating the new American primary school*. New York, NY: Teachers College Press.
- Takanishi, R. (2020). *An oral history with Ruby Takanishi. Interviewers: Kimber Bogard and Martha Zaslow*. New York, NY: Oral History Protocol of the Society for Research in Child Development.
- Zigler, E. (1978). The effectiveness of Head Start: Another look. *Educational Psychologist*, *13*, 71–77. doi:10.1080/00461527809529196
- Zigler, E. (1993). Communicating effectively before members of Congress. In K. McCartney & D. Phillips (Eds.), *An insider's guide to providing expert testimony before Congress* (pp. 11–15). Chicago, IL: Society for Research in Child Development.
- Zigler, E. (1998). A place of value for applied and policy studies. *Child Development*, *69*, 532–542. doi:10.1111/j.1467-8624.1998.tb06206.x
- Zigler, E. (2003). *An oral history with Edward Zigler. Interviewer: Elena Grigorenko*. New York, NY: Oral History Protocol of the Society for Research in Child Development.
- Zigler, E., Abelson, W. D., Trickett, P. K., & Seitz, V. (1982). Is an intervention program necessary in order to improve economically disadvantaged children's I.Q. scores? *Child Development*, *53*, 340–348. doi:10.2307/1128975
- Zigler, E., & Berman, W. (1983). Discerning the future of early childhood intervention. *American Psychologist*, *38*, 894. doi:10.1037/0003-066X.38.8.894
- Zigler, E. F., Finn-Stevenson, M., & Stern, B. M. (1997). Supporting children and families in the schools: The School of the 21st Century. *American Journal of Orthopsychiatry*, *67*, 396–407. doi:10.1037/h0080242
- Zigler, E. F., & Muenchow, S. (1992). *Head Start: The inside story of America's most successful educational experiment*. New York, NY: Basic Books.
- Zigler, E., & Styfco, S. J. (2002). A life lived at the crossroads of knowledge and children's policy. *New Directions for Child and Adolescent Development*, *2002*, 5–16. doi:10.1002/cd.54