ECPC 2 Narrative
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Priority Requirements

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The purpose of this priority is to fund a cooperative agreement to establish and operate an Early Childhood Personnel Center (Center) to achieve, at a minimum, the following:	
51	(a) Increased capacity of State IDEA Part C, Part B, section 619 programs, and other early childhood service sectors (e.g., Head Start, Early Head Start, Child Care, State-funded pre-K) to implement, scale up, and sustain a coordinated CSPD to ensure local personnel have the competencies to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families;
49	(b) Increased knowledge, skills, and competencies of State IDEA Part C and Part B, section 619 administrators to lead systemic improvement efforts, actively engage in broader early childhood initiatives, use TA effectively, and build more effective and sustainable State systems that can support a competent early childhood workforce that can improve outcomes for young children with disabilities and their families; and
49,51	(c) Increased knowledge, skills, and competencies of early childhood IHE faculty to align programs of study to State and national professional organization personnel standards, integrate Division of Early Childhood (DEC) recommended practices[3] throughout early childhood curricula, and design programs of study utilizing adult learning principles.
In addition to these programmatic requirements, to be considered for funding under this priority, applicants must meet the application and administrative requirements in this priority, which are:	
	(a) Demonstrate, in the narrative section of the application under "Significance of the Project," how the proposed project will--
1-28	(1) Address the need for States to be able to implement, scale up, and sustain a coordinated CSPD with personnel who have the competencies to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families. To meet this requirement the applicant must--
2-4;19	(i) Present applicable national and State data demonstrating the need to improve State CSPDs, including data and information about the need to improve specific components of State CSPDs (e.g., leadership, coordination, and sustainability; State personnel standards; preservice personnel development; in-service personnel development; recruitment and retention; or evaluation);
5-10	(ii) Demonstrate knowledge of current educational issues and policy initiatives relating to increasing the quantity and the knowledge, skills, and competencies of early childhood personnel working with young children with disabilities and their families; and(iii) Present information about the current level of States' implementation of CSPDs, including information on the implementation of specific components of the CSPDs, and the current capacity of State IDEA Part C and Part B, section 619 administrators to support systemic change;
12-19	(2) Present information on the current state of IHEs' abilities to effectively prepare early childhood personnel to have the competencies to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families. To meet this requirement the applicant must--
17-19	(i) Present applicable national data demonstrating the need to improve preservice preparation at the certificate, associate, bachelor's, and master's degree levels to align programs of study with State and national professional organization personnel standards, coordinate with in-service professional development, and integrate DEC recommended practices throughout the curricula;

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5-10 17-19	(ii) Demonstrate knowledge of current issues and policy initiatives relating to the preparation and professional development of a high-quality and competent early childhood workforce, including leadership personnel; and
18	(iii) Present information about the current capacity of faculty to align programs of study to State and national professional organization personnel standards, integrate DEC recommended practices throughout the early childhood curricula, and design programs of study utilizing adult learning principles; and
20-23	(3) Improve the early childhood workforce to deliver high-quality services and inclusive programs that lead to improved outcomes for young children with disabilities and their families, and indicate the likely magnitude or importance of the improvements.
	(b) Demonstrate, in the narrative section of the application under "Quality of the Project Services," how the proposed project will--
29	(1) Ensure equal access and treatment for members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability. To meet this requirement, the applicant must describe how it will--
44-45	(i) Identify the needs of the intended recipients for TA and information; and
46-48	(ii) Ensure that TA services and products meet the needs of the intended recipients;
	(2) Achieve its goals, objectives, and intended outcomes. To meet this requirement, the applicant must provide--
55-61	(i) Measurable intended project outcomes; and
56	(ii) The logic model by which the proposed project will achieve its intended outcomes. A logic model used in connection with this priority communicates how a project will achieve its intended outcomes and provides a framework for both the formative and summative evaluations of the project;
33-34	(3) Use a conceptual framework to develop project plans and activities, describing any underlying concepts, assumptions, expectations, beliefs, or theories, as well as the presumed relationships or linkages among these variables, and any empirical support for this framework;
	(4) Be based on current research and make use of practices supported by evidence (as defined in this notice). To meet this requirement, the applicant must describe--
12-17	(i) The current research on the assessment of CSPDs, capacity building, and the quality and effectiveness of various approaches to in-service and preservice preparation;
5-9	(ii) The current research about adult learning principles and implementation or improvement science that will inform the proposed TA to States, IHEs, and early childhood personnel; and
44-45	(iii) How the proposed project will incorporate current practices supported by evidence in the development and delivery of its products and services;
46-48	(5) Develop products and provide services that are of high quality and sufficient intensity and duration to achieve the intended outcomes of the proposed project. To address this requirement, the applicant must describe--
	(i) How it proposes to identify or develop the knowledge base on--
44-45	(A) Building and implementing components of an effective CSPD;
44-45	(B) Identifying specific strategies that State IDEA Part C and Part B, section 619 administrators can use to support a competent early childhood workforce that can improve outcomes for young children with disabilities and their families; and

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44-45	(C) Providing implementation supports (e.g., professional development and training, ongoing consultation and coaching, data to support decision making, and administrative supports) needed by faculty and professional development providers to effectively prepare early childhood personnel to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families;
48-49	(ii) Its proposed approach to universal, general TA,[4] which must identify the intended recipients of the products and services under this approach and should, at minimum, include activities focused on--
46-49	(A) Identifying and developing materials, resources, and tools to help State IDEA Part C and Part B, section 619 programs implement the components of a CSPD;
46-49	(B) Identifying and developing resources, materials, and tools for faculty who prepare early childhood personnel to align programs of study to State and national professional organization personnel standards, integrate DEC recommended practices throughout the early childhood curricula, and design programs of study utilizing adult learning principles; and
46-49	(C) Identifying and developing resources and materials to increase awareness and recognition at the State and national level of the various personnel standards and competencies needed for early childhood personnel to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families;
	(iii) Its proposed approach to targeted, specialized TA,[5] which must identify--
42	(A) The intended recipients of the products and services under this approach; and
44-45	(B) Its proposed approach to measure the readiness of potential TA recipients to work with the project, assessing, at a minimum, their current infrastructure, available resources, and ability to build capacity at the local level;
52	C) The process by which the proposed project will collaborate with other federally funded TA centers, including OSEP-funded centers, to develop and implement a coordinated TA plan when they are involved in a State;
52	(D) The process by which the proposed project will lead the development and delivery of professional development for State IDEA Part C and Part B, section 619 administrators to increase their knowledge, skills, and competencies and collaborate with other federally funded TA centers, including OSEP-funded centers, to develop content for this professional development; and
49	(E) The process by which the proposed project will work with OSEP-funded personnel development projects to align the program of study to State and national professional organization personnel standards and integrate DEC recommended practices throughout the early childhood curricula.
	(iv) Its proposed approach to intensive, sustained TA,[6] which must identify--
50	(A) The intended recipients of the products and services under this approach;
52	(B) Its proposed approach to measure the readiness of State IDEA Part C and Part B, section 619 programs to work with the project, including their commitment to the initiative, alignment of the initiative to their needs, current infrastructure, available resources, and ability to build capacity at the local level;
50-53	(C) Its proposed plan for assisting State IDEA Part C and Part B, section 619 administrators to build CSPDs that include State standards, certification, and licensure requirements aligned to national professional organization personnel

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	standards, and that include professional development, including coaching, for implementing the DEC recommended practices;
52	(D) Its proposed plan for working with appropriate levels of the early intervention and early childhood system (e.g., regional TA providers, early intervention service programs and providers, LEAs, Head Start, child care, home visiting, State preschool, and families) to ensure that there is communication between each level and that there are systems in place to support the use of practices supported by evidence;
52	(E) The process by which the proposed project will collaborate with other federally funded TA Centers, including OSEP-funded centers. Include the process the project will use to develop one TA plan when multiple OSEP-funded centers are involved in a State or a coordinated TA plan when centers from other agencies are involved in a State; and
55-61	(F) The process by which the proposed project will ensure the use of TA practices supported by evidence and continuously evaluate the practices to improve the delivery of TA.
	(6) Develop products and implement services that maximize efficiency. To address this requirement, the applicant must describe--
53,54	(i) How the proposed project will use technology to achieve the intended project outcomes;
52	(ii) With whom the proposed project will collaborate and the intended outcomes of this collaboration; and
54	(iii) How the proposed project will use non-project resources to achieve the intended project outcomes.
55-61	(c) In the narrative section of the application under "Quality of the Evaluation Plan," include an evaluation plan for the project. The evaluation plan must describe: measures of progress in implementation, including the criteria for determining the extent to which the project's products and services have reached its target population; measures of intended outcomes or results of the project's activities in order to evaluate those activities; and how well the goals or objectives of the proposed project, as described in its logic model, have been met.
	(d) Demonstrate, in the narrative section of the application under "Adequacy of Project Resources," how--
62	(1) The proposed project will encourage applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability, as appropriate;
62-70	(2) The proposed key project personnel, consultants, and subcontractors have the qualifications and experience to carry out the proposed activities and achieve the project's intended outcomes;
70-72	(3) The applicant and any key partners have adequate resources to carry out the proposed activities; and
72	(4) The proposed costs are reasonable in relation to the anticipated results and benefits.
	(e) Demonstrate, in the
	(1) The proposed management plan will ensure that the project's intended outcomes will be achieved on time and within budget. To address this requirement, the applicant must describe--

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Attachment A	(i) Clearly defined responsibilities for key project personnel, consultants, and subcontractors, as applicable; and
Attachment A	(ii) Timelines and milestones for accomplishing the project tasks;
Attachment A	(2) Allocation of key project personnel and any consultants and subcontractors and how these allocations are appropriate and adequate to achieve the project's intended outcomes;
73-76	(3) The proposed management plan will ensure that the products and services provided are of high quality, relevant, and useful to recipients; and
75-76	(4) The proposed project will benefit from a diversity of perspectives, including those of families, educators, TA providers, future leaders, researchers, and policy makers, among others, in its development and operation.
	(f) Address the following application requirements. The applicant must--
56	(1) Include, in Appendix A, a logic model that depicts, at a minimum, the goals, activities, outputs, and intended outcomes of the proposed project;
App A, 34	(2) Include, in Appendix A, a conceptual framework for the project;
App A	(3) Include, in Appendix A, personnel-loading charts and timelines, as applicable, to illustrate the management plan described in the narrative;
	(4) Include, in the budget, attendance at the following:
budget	(i) A one and one-half day kickoff meeting in Washington, DC, after receipt of the award, and an annual planning meeting in Washington, DC, with the OSEP project officer and other relevant staff during each subsequent year of the project period.
budget	(ii) A two and one-half day project directors' conference in Washington, DC, during each year of the project period;
budget	(iii) Three trips annually to attend Department briefings, Department-sponsored conferences, and other meetings, as requested by OSEP; and
budget	(iv) A one-day intensive 3+2 review meeting in Washington, DC, during the last half of the second year of the project period;
budget	(5) Include, in the budget, a line item for an annual set-aside of five percent of the grant amount to support emerging needs that are consistent with the proposed project's intended outcomes, as those needs are identified in consultation with and approved by the OSEP project officer.
49	(6) Engage doctoral students or post-doctoral fellows in the project to enhance doctoral training and deepen the knowledge, skills, and competencies future leaders in the field need to effectively implement, scale up, and sustain a CSPD and prepare personnel to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families; and
48	(7) Maintain a website that meets government or industry-recognized standards for accessibility.
62, 75,76	**Other: General Requirements:** (a) The projects funded under this competition must make positive efforts to employ, and advance in employment, qualified individuals with disabilities (see section 606 of IDEA). (b) The applicant and grant recipient funded under this competition must involve individuals with disabilities or parents of individuals with disabilities ages birth through 26 in planning, implementing, and evaluating the project (see section 682(a)(1)(A) of IDEA).

A. Significance

Concerns about the quantity and quality of personnel in early childhood intervention (ECI) are not new; in 2010 Bruder recommended that field of ECI reclaim a system of evidence based professional development by using a comprehensive system wide model such as a comprehensive system of personnel development (CSPD) (p. 349). We propose a 5-year TA Center to continue work begun almost 5 years ago on the reestablishment of statewide CSPDs for early childhood (EC) through the Early Childhood Personnel Technical Assistance Center (referred to in this proposal as ECPC I) The purpose of this proposal is to present information to meet the requirements in this RFP to continue the work of ECPC I through the Early Childhood Personnel Technical Assistance Center (TA) II (ECPC II). The purpose of ECPC II is:

- To achieve **increased capacity of State IDEA Part C, Part B, section 619 (619),** and other early childhood programs **to implement, scale up, and sustain a coordinated comprehensive system of personnel development (CSPD)** to ensure local personnel have the competencies to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families.

- To **increase the knowledge, skills, and competencies of State (and territory) IDEA Part C and 619 administrators** to lead systemic improvement efforts, actively engage in broader early childhood initiatives, use TA effectively, and build more effective and sustainable State systems that can support a competent early childhood workforce that can improve outcomes for young children with disabilities and their families.

- **To increase knowledge, skills, and competencies of early childhood IHE faculty and other professional development (PD) staff** to align programs of study to State and national professional organization personnel standards, integrate Division of Early Childhood recommended practices (RP) into programs of study, and utilize adult learning principles.

The proposed director (Bruder) and co-directors (Stayton & Sugai) of this proposed ECPC TA center have the expertise to meet the requirements above because of their long experience providing effective training and TA through federally funded centers:

- The **Map to Inclusive Child Care TA Center** (directed by Bruder) was funded by the U.S. Dept. of HHS, Child Care Bureau, to assist states to increase capacity in their child care system for infants and young children with disabilities. A strategic planning process was conducted with cross sector state and local representatives in 31 states and territories to develop, implement and sustain action plans that focused on policy reform, inclusive practice implementation, and personnel training.

- **The Research and Training Center on Service Coordination (RTC) (**co-directed by Bruder**)** was funded by OSEP and used an iterative process to identify outcomes and practices associated with effective service coordination in Part C state systems (cf. Bruder et al., 2005; Dunst & Bruder, 2006). Training materials on effective service coordination practices were developed and used to improve the competence of service coordinators (Bruder, 2005; Bruder & Dunst, 2006). A community of practice in service coordination is still in existence, and 11 states will meet in November 2017 in CT with the support of the current Early Childhood Personnel Center (ECPC I).

- **The Center to Inform Personnel Preparation Policy and Practice in Early Intervention and Preschool Education** (**CIPP**), (co-directed by Bruder and Stayton) was funded by OSEP to examine the status of personnel preparation and continuing education for the workforce providing services to infants and young children eligible for early childhood intervention (ECI) services under the Individuals with Disabilities Act (IDEA). The CIPP concluded that ECI personnel were not meeting the needs of state systems for early intervention and preschool under IDEA because of a number of issues identified through assessments of the skills, competencies, system implementation supports and beliefs of those in state and local ECI systems. Summaries of the studies conducted through CIPP are located at http://uconnucedd.org/projects/per_prep/.

- **The PBIS Center** (PBIS.ORG), (co-directed by Sugai) funded by OSEP funded, continues to provide national, state and local high quality TA using principles and practices which have been applied and validated over 20 of operation.

- **The Early Childhood Personnel Center I (ECPC I)** (co-directed by Bruder and Sugai with assistance from Stayton) funded by OSEP over the past 4.75 years (ECPCTA.ORG). ECPC I was funded to meet state-identified needs for personnel preparation in special education, early intervention, related services (hereafter referred to as ECI staff), and early childhood education (hereafter referred to as EC) to work with infants and toddlers and young children with disabilities; and to ensure that personnel had the necessary knowledge and skills, derived from practices that were determined through scientifically based research and experience, to successfully serve those children.

The requirements for the ECPC II as described in the RFP, continues and expands the work that was initiated and implemented by the ECPC I, as will be described throughout this proposal.

The ECPC I established a capacity building TA center that addressed ECI personnel needs through the development of six interrelated subcomponents of an integrated and coordinated CSPD. A CSPD is not a new concept having been instituted as a framework in P.L. 94-142: The Education for All Handicapped Children Act to support and recruit, train, retain and evaluate the special education workforce (cf. Duncan, 1980; Gilles, 1980; NECTAC, 2000; Riffle & Smith-Davis, 1991; Smith-Davis, Burke, & Noel, 1984; Striffler & Fire, 1999). This framework was adapted by Bruder and Sugai for ECPC I, including the use of a strategic planning process to develop the subcomponents of the framework as first outlined by Riffle and Smith-Davis (1991).

ECPC I provided intensive TA through a strategic planning process to 12 states to facilitate the development and implementation of integrated EC CSPDs. The CSPD model that was proposed was refined through a collaboration with the Early Childhood Technical Assistance Center (now ECSTAC) (see ECTAcenter.org for the 6-subcomponent systems framework) and is pictured below on Figure 1.

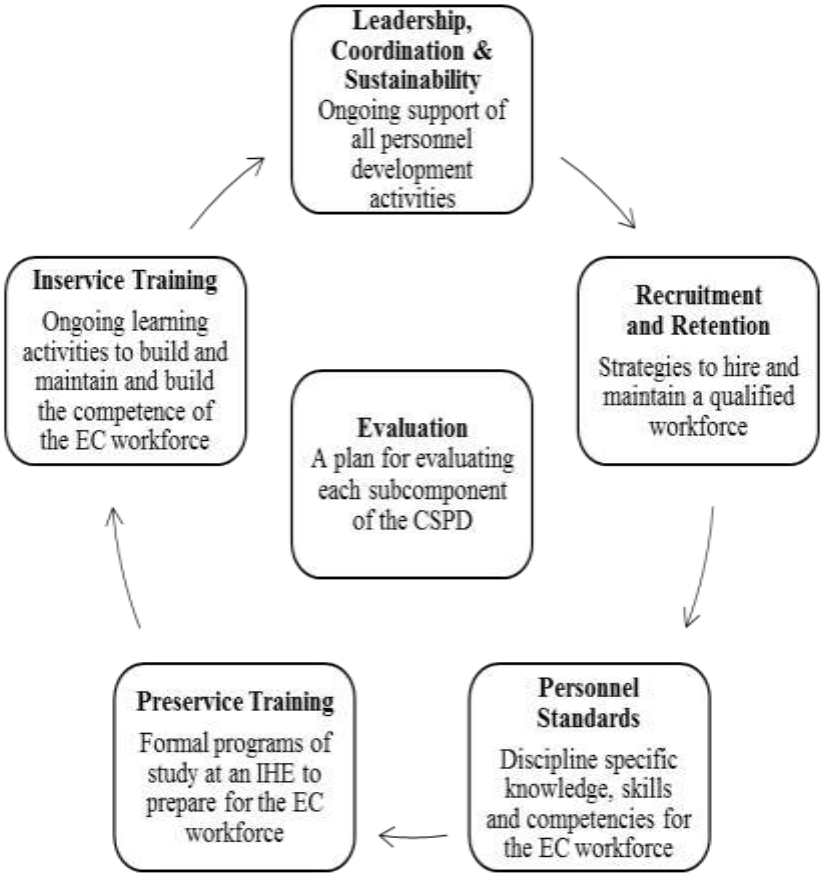


Figure 1. CSPD subcomponents and framework.

The CSPD framework was further refined into a self-assessment that of quality indicators and elements for each of the subcomponents. The quality indicators appear on Table 1 and the elements and the self-assessment is in Appendix A, and at ECPCTA.ORG.

Table 1 *Personnel Component of the Early Childhood Systems Framework*

Leadership, Coordination, & Sustainability

- **Quality Indicator 1:** A cross sector leadership team is in place that can set priorities and make policy, governance, and financial decisions.
- **Quality Indicator 2:** There is a written multi-year plan in place to address all sub-components of the CSPD.

Personnel Standards

- **Quality Indicator 3:** State personnel standards across disciplines are aligned to national professional organization personnel standards.
- **Quality Indicator 4:** The criteria for state certification, licensure, credentialing and/or endorsement are aligned to state personnel standards and national professional organization personnel standards across disciplines

Preservice Personnel Preparation

- **Quality Indicator 5:** Institution of higher education (IHE) programs and curricula across disciplines are aligned with both national professional organization personnel standards and state personnel standards.
- **Quality Indicator 6:** Institution of higher education programs and curricula address early childhood development and discipline specific pedagogy.

Inservice Personnel Development

- **Quality Indicator 7:** A statewide system for inservice personnel development and technical assistance is in place for personnel across disciplines
- **Quality Indicator 8:** A statewide system for inservice personnel development and technical assistance is aligned and coordinated with higher education program and curricula across disciplines

Recruitment and Retention

- **Quality Indicator 9:** Comprehensive recruitment and retention strategies are based on multiple data sources, and revised as necessary.
- **Quality Indicator 10:** Comprehensive recruitment and retention strategies are being implemented across disciplines.

Evaluation

- **Quality Indicator 11:** The evaluation plan for the CSPD includes processes and mechanisms to collect, store, and analyze data across all subcomponents
- **Quality Indicator 12:** The evaluation plan is implemented, continuously monitored, and revised as necessary based on multiple data sources

The ECPC I also provided targeted TA to Part C and 619 state administrators on subcomponents of the CSPD: the alignment of state and national personnel standards and the development of leadership skills in the areas of collaboration and systems reform for inclusive EC systems for all infants, young children, and their families.

Additionally, ECPC I compiled, analyzed and developed a web site for a data base of all EC personnel standards by discipline and state (posted on the standards map at ECPCTA.ORG). This work expanded to support the revision of the personnel standards of the Division of Early Childhood (DEC) of the Council of Exceptional Children (CEC), and to align them with personnel standards from the National Association of the Education of Young Children (NAEYC), and the DEC RP. The purpose being: to facilitate the alignment of in-service PD to personnel standards and practices, and, to assist IHE faculty to meet EC and ECSE accreditation standards and plan cohesive and evidenced based courses of study for EC and ECSE teachers.

This ECPC I activities on personnel standards also facilitated the formation of a national cross-disciplinary work group composed of representatives from the American Occupational Therapy Association (AOTA), the American Physical Therapy Association (APTA), the American Speech-Language-Hearing Association (ASHA), Zero to Three, NAEYC, DEC and CEC. The personnel standards and competencies of each discipline were cross referenced and then themed by the work group. Each organization in the workgroup endorsed the set of cross-disciplinary competencies for EC practitioners as of 9/2017.

Lastly, a series of research syntheses were completed by ECPC I, as were procedural manuals to guide the TA provided by ECPC I and the strategic planning process (see ecpcta.org and Appendix D). The two most recent research syntheses are on adult learning (Dunst, Bruder, & Hamby, 2015) and leadership (Dunst, in preparation).

The remainder of this section of the proposal will provide a rationale for the **Significance** of the proposed ECPC II, and in the sections that follow, we describe the **Quality of the Project Services and Products,** a formal **Evaluation Plan,** and both the **Project Resources** and **Management Plan** that will be required to ensure project success.

1. Need: Infrastructure gaps or opportunities in personnel development.

1.1. Background and Status of ECI Personnel Development. Research identifying the conditions necessary to support optimal brain development during the early years of life (cf. Sameroff, 2010; Shonkoff, 2010; Yoshikawa et al., 2013) has created an urgency to expand federal early childhood (EC) initiatives such as HS, Home Visiting Programs, and other Early Learning Grants (Gomez, Kagan, & Fox, 2015). In addition, ECI programs for children with disabilities continue to grow at a rapid rate as more children are identified as eligible for services under IDEA: Part C for infants and toddlers or 619 for preschoolers (Brown & Woods, 2011). As society and families have become more aware of the importance of the years from birth to 5, EC and ECI models, programs, and services have become increasingly available to all families and children (Allen & Kelly, 2015a; Kagan & Kauerz, 2012; U.S. Department of Education, 2015).

In 2016, approximately 2,354,810 three and four year old children were reported as being enrolled in state preK, Head Start (HS), or preschool special education programs across the country (Barnett et al., 2017). Approximately 763, 685 children age 3-5 were enrolled in 619 programs and 357, 715 children under 3 were enrolled in Part C programs in 2016 (retrieved from https://ed.gov/programs/osepidea/618-data/static-tables/index.html#partc-) Additionally, 147,519 children are in Early Head Start Programs, and 160,000 infants and young children were served under the Maternal and Child Health Funded Home Visiting programs. While there may be some duplicative counts, it has been reported that there are 11 million children under 5 in Child Care (http://www.census.gov/prod/2013pubs/p70-135.pdf). There are also many other state and local programs (e.g. home visiting and Preschool) that do not have a national data base to estimate child enrollment. No matter what program, the enrolled children represent a diversity of backgrounds, family structures, abilities, developmental risks and disabilities. Infants and young children age birth to five may qualify for Part C or 619 services under IDEA because their development has been compromised in some way and they are experiencing a delay in what they are expected to do according to their chronological age because of factors attributed to either established risk, biological risk, or environmental risk (or a combination).

ECI, provided under IDEA, can be described as adhering to an ecological model of human development. ECI views child, parent, and family functioning as complex: the processes that influence early learning and development are produced by the interaction of the environments experienced by a child and the characteristics of those (including families, caregivers, teachers, and interventionists) within these environments (Bruder, 2001; Dunst, 2007; Gallimore, Weisner, Bernheimer, Guthrie, & Nihira, 1993; Guralnick, 2005a). Bronfenbrenner's (1977, 1992) framework suggests that early learning and development varies as a function of both personal and environmental characteristics, and the combined influences and interactions between these characteristics.

As ECI programs continue to grow and serve larger numbers of diverse infants, young children and families across all EC environments, attention has focused on the qualifications, knowledge, and skills of the workforce who staff these programs (Allen & Kelly, 2015b; Couse & Recchia, 2016; Horm, Hyson, & Winton, 2013; Snyder, Hemmeter, & McLaughlin, 2011; Snyder et al., 2012; Stayton, 2015). For preschool age children under IDEA (619), this includes special educators and related service personnel. Infants and toddlers (Part C) have many of the same categories of service providers with a major distinction from Part B being the absence of a required special educator. For example, there are over 15 personnel categories for both programs. Most of these personnel categories have their own set of personnel standards, and professional hierarchy or career ladder (Bruder, 2010).

It has been reported that approximately 41,203 teachers and 46,138 para-educators are providing preschool special education services under IDEA (U.S. Department of Education Office of Special Education and Rehabilitative Services Office of Special Education Programs, 2014). While there are no personnel data collected about those providing services under Part C of IDEA, a sample state such as CT (population of birth to 3 year olds = 110,000) employed 1200

practitioners to serve approximately 5034 eligible infants and toddlers in 2014-2015 (www.birth23.org/aboutb23/AnnualData.html). Numbers of related service personnel under Part B of IDEA are available (U.S. Department of Education Office of Special Education and Rehabilitative Services Office of Special Education Programs, 2014), though there is no breakdown of types of personnel by age served (e.g. preschoolers). One estimate on speech and language pathologists suggests that approximately 71,000 provide service to children under age 5 (Prelock & Deppe, 2015). In addition to the numbers of personnel serving children under the IDEA, the US Bureau of Labor Statistics reports that there were 441,000 preschool teaching jobs and 1,260,600 child care jobs (for children age birth to age 5 in 2014). The qualifications for these teachers vary by state, though 30 states require at least a bachelor's degree for those teaching in a state funded program, 45 states require specialized training for teachers in pre-K, and 43 states require 15 hours of in-service a year (Barnett, Carolan, Squires, Brown, & Horowitz, 2015). It is even more confusing in ECSE as there were 23 different age levels addressed by EC and ECSE teacher certifications (Chen & Mickelson, 2015).

Recent examinations of the status of the EC workforce have identified a number of issues that have impacted the quality and effectiveness of EC practices, services and programs (cf. Allen & Kelly, 2015b; Boe, 2014; Bruder, 2010, 2016; Bruder, Mogro-Wilson, Stayton, & Dietrich, 2009; Gomez et al., 2015; Winton, Snyder, & Goffin, 2016; Woods & Snyder, 2009; Zaslow, 2009). These include: shortages of personnel; inequities in wages and compensation for personnel across EC programs; shortages of preservice EC programs of study, coursework and practicum opportunities; limited funding for EC continuing education; the absence of integrated and comprehensive personnel development systems that meet national personnel standards and adult learning guidelines; and limited experimental evidence about the effects of preservice preparation and/or in-service continuing education on EC improvements in program quality and child and family learning. While these workforce issues seem daunting, they must be addressed in order to assure effective and comprehensive state and local systems of EC education for all infants, young children, and families; as recently reinforced by the National Institute for Medicine, National Research Council (Allen & Kelly, 2015b) and the American Academy of Pediatrics (2017).

Research Gaps. Bruder (2016) recently reviewed the literature to identify the research evidence informing and guiding personnel preparation (preservice) and continuing education (in-service) practices for those providing early intervention (EI) (children aged 0 to 3) or preschool special education ECSE (children aged 3-5) to eligible infants and young children and their families under the IDEA(ECI). The data in the chapter came from variety of sources including historical documents, surveys, non-experimental demonstrations, experimental studies, and research reviews and syntheses. Survey data documented a lack of a systematic approach in both preservice and in-service programs as reflected by descriptions of IHE program offerings, state in-service and professional development (PD) program offerings, and perceptions of those in ECI practice about their knowledge, skills and needs. Inadequacies in ECI preservice training were identified through surveys and studies of the abilities and perceptions of program graduates.

Experimental studies of preservice and in-service practices demonstrated limited effects of training and PD activities on teacher behavior. The majority of these studies omitted data on the training impact of interventions on measures of child skills, and most did not measure, nor show training effects, on the generalization and maintenance of trainee skills. Finally, research reviews on program features of personnel training practices suggested a high level of variability across studies on targeted practices such as instruction, performance feedback and coaching. The studies that used coaching were especially problematic because of conflicting, changeable and non-empirical/non operationalized definitions used to describe elements of this feature of personnel intervention (cf. Artman-Meeker, Hemmeter, & Snyder, 2014). Potential measurement issues across studies were illuminated, as were issues related to replications of the wide scope of interventions across inclusive settings. These research deficits have been identified by many in the field (Horm et al., 2013; Hyson, Horm, & Winton, 2012; Snell, Doswell-Forston, Stanton-Chapman, & Walker, 2013; Snyder et al., 2012; Winton et al., 2016), **yet they have not been a deterrent to the growth of EC and ECI programs, and the subsequent growing and urgent need for qualified and skilled personnel.**

Practice Gaps. As an example of the need for better preparation and ongoing PD models for EC and ECI staff, a workforce training needs assessment was collaboratively implemented and analyzed by ECPC I staff and Iowa state EC administrators in 2016 (Maude, Dunst, & Bruder, in preparation). IA is one of the ECPC I intensive TA states. **The statewide assessment surveyed 955 professional about their knowledge and skills to implement the DEC RP (DEC, 2014) (RP), which the ECPC I used as a benchmark of workforce competence**. The professionals were employed in all of the nine Area Education Agencies (AEA) across the state, as well as school districts and to a lesser extent, Head Start (HS). The majority identified their disciplines or professions as early childhood education or early childhood special education (70%) followed by speech and language pathology, occupational therapy, and physical therapy (18%). Three quarters of the participants had five or more years of experience in EC or ECI.

The survey participants completed a self-assessment of their skills in six different DEC topic areas (Assessment, Environment, Family, Instruction, Teaming and Collaboration, and Transitions). Each topic area included between two (Transitions) and 13 (Instruction) DEC RP restated in terms of the respondents' personal judgments of their current use of each of the practices (current performance) and their desired use of the practices (desired or optimal performance). Across all items, participants rated their desired performance higher than current performance, and all analyses between the current and desired performance of practices were significant at the $p = .0000$ level (paired *t*-tests), and all of the effect sizes for the between contrasts differences were large. There were also large numbers of between practice area differences for both current and desired use of the practices as evidenced by the number of mean difference effect sizes for the between practice area comparisons beyond what would be expected by chance. Thirty-one of 45 comparisons (69%) for current performance and 25 of the 45 comparisons (56%) for desired performance had small to large effect size differences.

Opportunities. There are a number of initiatives that will provide opportunities to positively impact the quality of the EC and ECI workforce. **First,** OSEP's new accountability system, *Results Driven Accountability* (RDA), incorporates a qualitative indicator, the State Systemic Improvement Plan (SSIP) that focuses on improving results for children with disabilities. The state Annual Performance Report now requires objectives for the improvement of developmental and educational results and functional outcomes for young children receiving IDEA services. States must also assess the capacity of their current systems to increase the capacity of LEAs/EIS programs to implement, scale up, and sustain, evidence-based practices that will result in improved outcomes for infants, toddlers, and preschoolers with disabilities. **All state systems of Part C and 619 must improve workforce competence in order to achieve their SSIP goals and objectives.**

Second, there is a focus on the profession of the EC educator, and the ECSE educator in regard to roles and responsibilities. NAEYC has initiated the Power to the Profession "to establish a shared framework of career pathways, knowledge and competencies, qualifications, standards, and compensation to unify the entire profession, across guidelines, frameworks and standards that currently operate across programs, organizations and states" (http://www.naeyc.org/profession/overview). ECPC I has been a member of the stakeholder group of organizations participating in the initiative. As a result of this focus, the DEC has partnered with the ECPC I to initiate a similar series of activities to examine the profession of EI and ECSE in collaboration with NAEYC. Workgroups will begin this fall, 2017. **Anticipated outcomes of these activities are recommendations for consistent state credentialing standards for all EC and ECI professionals.**

Third, the OSEP funded ECI TA centers have begun to systemize their TA process and products to collaboratively impact the field of ECI. The centers meet monthly using web assisted technology and meet quarterly (or more frequently) with OSEP. The results of these meetings has been a joint commitment to address state issues from a common lens and the discussion of consistent TA procedures. **One goal is a collaborative TA plan for state systems to coordinate all state TA efforts.**

Fourth, State systems of education, including early education, will be required to provide PD using evidenced based practices under new guidelines passed under ESSA. (http://www.edweek.org/ew/articles/2017/04/26/school-districts-update-professional-development.html?qs=PD). The ESSA defines high-quality professional learning as sustained, intensive, collaborative, job-embedded, data-driven, and classroom-focused. **This requirement presents opportunities for ECI, EC teachers and other personnel to participate in effective PD that will be relevant to their needs and the needs of the young children they teach.**

Fifth, IHEs are beginning to recognize that skill based teaching should be taught to prospective faculty during their PHD training, using evidenced based practices (http://www.chronicle.com/specialreport/Teaching-PhDs-How-to-Teach/). **This** focus on EB adult learning strategies at the IHE level **will highlight opportunities for collaborative activities across disciplines and preservice training programs for doctoral level candidates.**

Sixth, there is a growing awareness and commitment to inclusive practices and programs for all children. Research and practice have provided models for curriculum modifications, personnel preparation, and data guided instruction (Guralnick & Bruder, 2016; Strain, 2017). The federal government has also provided policy guidance from the U.S. Departments of HHS and Education (U.S. Department of Health, U.S. Department of Education, 2015). This guidance also provides a blueprint of practices that can be implemented at the state and local level to ensure the continued growth of availability of high quality inclusive early childhood practices and programs for all young children and their families. **These resources are available as implementation supports for state ECI and EC administrators and IHE faculty and other PD administrators to build an inclusive EC system.**

Last, the evidence base for the DEC RP is being synthesized using a research model developed by Dunst (2016). Dunst also began a process of translating DEC practices into validated practice guides with checklists to monitor fidelity (see ECTACenter.org). The DEC knowledge and skills personnel standards have been revised using literature from an ECPC review process,and they are being aligned with the DEC RP through the ECPC I (see ECPCTA.ORG). **Collectively, these benchmarks of quality will inform the field of personnel preparation and continuing education and provide content and standards from which to design or refine IHE course work, programs of study and PD training activities in order to support a high quality workforce.**

Summary. The growing and diverse numbers of infants and young children and families in need of a competent workforce has highlighted the absence of research-based practices and practice based research in personnel preparation and continuing education in ECI. Opportunities exist, however, to address the issues surrounding the EC workforce in collaboration with other personnel initiatives and EC organizations. ECPC II will structure all objectives and activities to take advantage of these opportunities.

Twenty years ago, Guralnick (1997) challenged the field to acknowledge the complexities in child development, family systems, program practices and service provider characteristics when implementing ECI research based interventions. Referred to as second generation research design, it emphasized Bronfenbrenner's framework and the interrelationships of personnel characteristics, child and family characteristics, ECI program features and other features (e.g. culture; community) that could contribute in optimum family and child impact and child development. Rather than ignore the complexity surrounding the preparation and ongoing development of the EC workforce, Bruder (2016) addressed the many variables and features of a systems approach to personnel development through an illustration, which is on Figure 2 (see Bruder, 2016, p. 332). The illustration is glaring and overwhelming, yet it depicts **the challenges facing state and local program administrators, IHE faculty and other PD providers intent on preparing, and supporting a growing and diverse workforce composed of personnel from different disciplines, professions and personnel standards, to facilitate positive outcomes with growing and diverse group of infants, preschoolers and their families.**

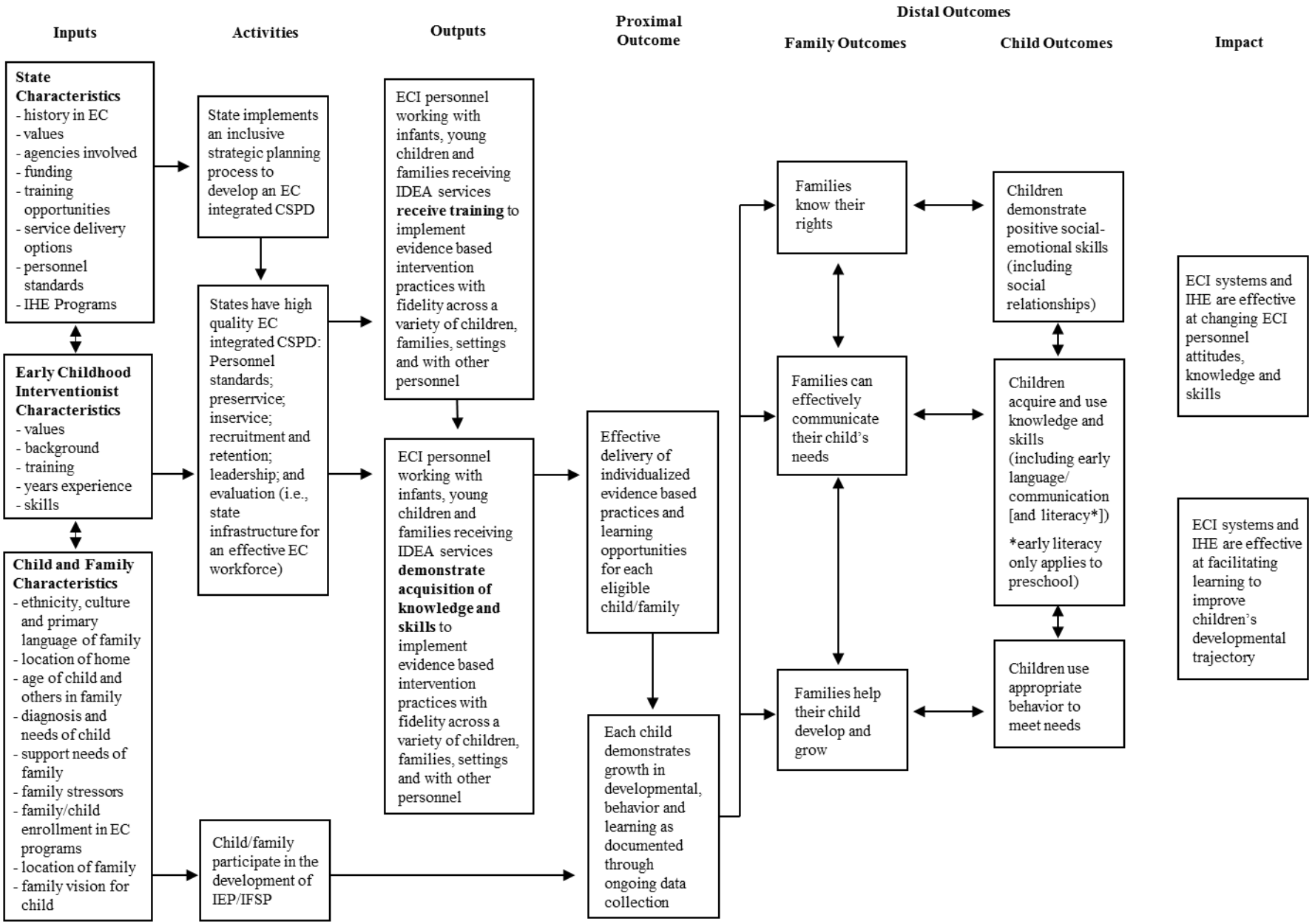


Figure 2. Personnel Development Logic Model

1.2 Status of State EC CSPDs. A coordinated system of comprehensive personnel development remains a goal for most states and territories across the country. Over the past 4 years, the ECPC I has collected data on the various subcomponents of a CSPD across all states, as well as with our TA recipients. **It should be noted that the ECPC I is in process of assessing every state and territory on CSPD subcomponents and indicators this fall (2017) at the end of the 5 years of TA funding as part of its evaluation plan. The IRB approved survey will be implemented through interview and on line data reviews.**

State Part C and 619 coordinators were assessed (in 2013) to measure the presence of CSPD subcomponents (see ECPCTA.ORG for a copy of the survey) as a baseline for ECPC activities. Many respondents reported having some indicator of a CSPD. Forty-nine Part B (619) coordinators responded to the interview and 73% reported having Personnel Standards; 67% reported having adequate IHE programs; 59% reported having PD systems; 51% had a recruitment and needs assessments and 35% evaluated their personnel system. Similar results were found with 50 Part C coordinators: 74% reported having personnel standards; 62% reported having adequate IHE programs; 58% reported having PD systems; 54% had a recruitment and needs assessments and 36% evaluated their personnel system.

However, a more in-depth assessment of CSPD status occurred with the 25 states receiving targeted TA and using the personnel component self-assessment of the EC systems framework. These state teams reported a lack of elements that comprise the quality indicators under each CSPD subcomponent as shown below in Figure 3 (3 = has element; 2= some progress; 1= no evidence of the element**).**

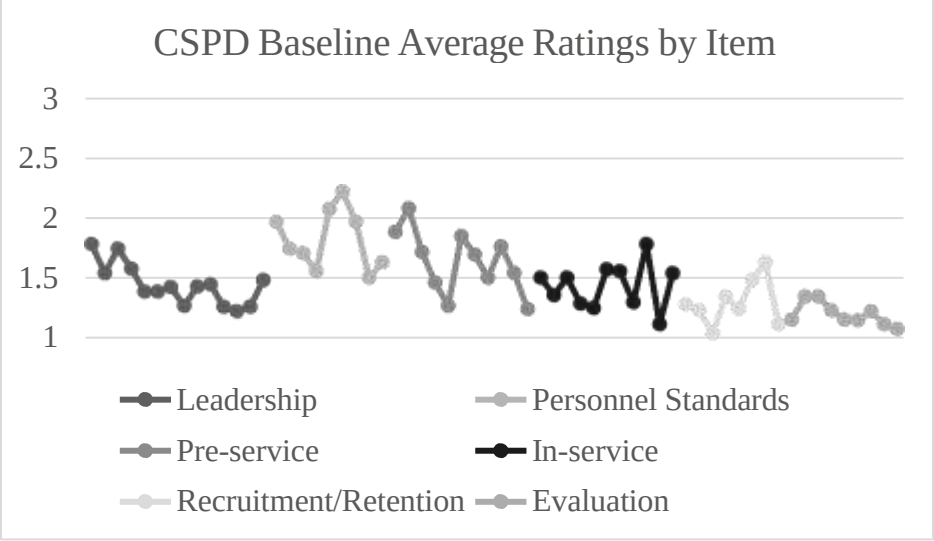


Figure 3. Average ratings for each of the items of the CSPD self-assessment for states (n=25) receiving intensive or targeted TA.

Of interest also are the data from four states from cohort 1 who received intensive TA to develop their CSPD. Over 18 months, the scores on their self-assessment improved as shown below, demonstrating improvement as a result of the TA provided by ECPC as shown in Figure 4**. It should be noted the state SSIP goals reported to OSEP identifies personnel training needs across all Part C programs, and most of the 619 programs.**

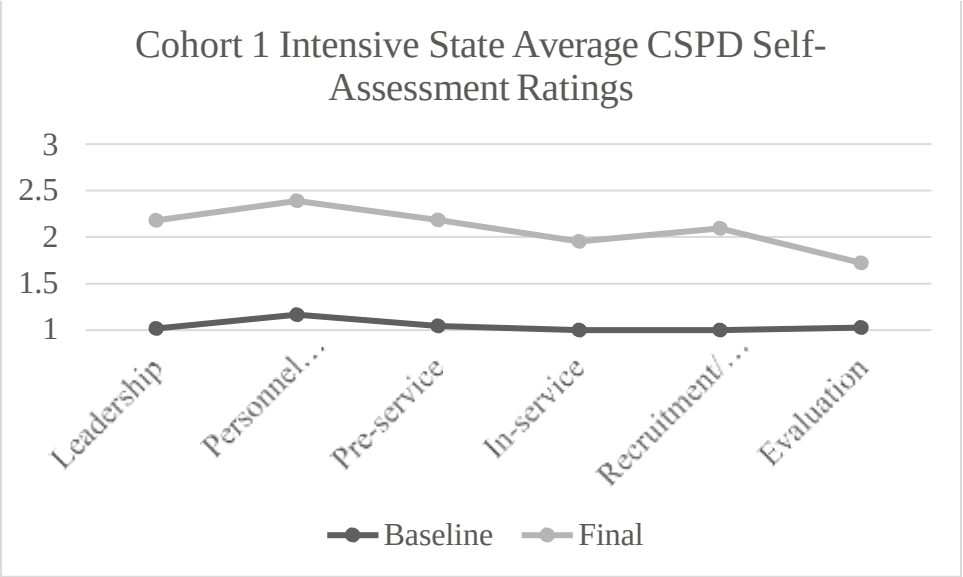


Figure 4. Average ratings for each of the sub components of the CSPD self-assessment at baseline and after receiving 18 months of Intensive TA for Cohort 1 (DE, IA, KS, & OR).

1.3 CSPD Subcomponents. Other sources of data specifying the personnel development needs across each of the sub components of a CSPD include:

- **Recruitment and Retention**: Data collected as part of the ITCA Annual Survey of Part C coordinators (released September 5, 2017) reports that out of forty-four states, forty-two (95.45%) responded they were experiencing shortages in qualified providers. The top three providers identified were Speech-Language Pathologists (80.95%), Physical Therapists (76.19%) and Occupational Therapists (69.05%) and nineteen states (45.24%) identified a shortage of Special Educators. Other disciplines reported by states having shortages included psychologists, vision specialists and social workers.

  According to the IDEA 38th Report to Congress (2016), in 2013 there were a total of 87, 341 FTE special education teachers and paraprofessionals employed to serve children age 3-5 under IDEA. Total number of personnel by discipline (audiologists, counselors, interpreters, medical/nursing staff, occupational therapists, orientation and mobility specialists, physical education and recreation and therapeutic recreation specialists, physical therapists, psychologists, social workers, and speech-language pathologists) are broken down across all of Part B (age 3-21). It was reported there was a

total of 206,209 fully certified related service personnel to serve children under Part B of IDEA, and speech-language pathologists were highest number employed across all disciplines (n=66,487; 32.24%). The next highest related service discipline represented was psychologists (n=34,996; 17%), and the lowest were audiologists (n=1,323; 0.6%).

- **Personnel Standards**: Certifications, licenses, or credentials have been used by states to guarantee that teachers have met a standard that qualifies them to provide services to children based on their discipline focus. These are awarded by a state or jurisdiction to individuals who have completed state-established, minimum requirements usually through approved programs of preparation and specialized examinations (e.g. Praxis), or portfolio review processes (e.g. edTPA). Though states use many names for this credentialing process, they are usually categorized as licensure, certification, endorsement or a combination of all.

  Currently, all states require certification and licensure for those disciplines that provide ECI services under IDEA. Recent reviews of requirements across the 50 states found that in comparison to all other disciplines (cf. Catalino, Chiarello, Long, & Weaver, 2015; Muhlenhaupt, Pizur-Barnekow, Schefkind, Chandler, & Harvison, 2015; Prelock & Deppe, 2015), the EC and ECSE credentials presented the most variability (Chen & Mickelson, 2015; Stayton et al., 2009). There were 23 different age levels addressed by EC and ECSE teacher certifications across states, and there was little congruence between states in regard to the exact name of ESCE licensures/certifications. The ECSE titles ranged from infant toddler family specialist credential, special education preschool certificate, preschool special needs, special education preschool/EC endorsement, teacher of children with disabilities 0-5, and preliminary education specialist instruction credential with an EC special education specialty. Lastly, while the majority of licensures/certifications required an exam, only 41% required specific curriculum/coursework, and 55% required specific field/clinical work requirements (i.e., specified number of hours, populations, age ranges, experiences). Of most concern was the lack of congruence between state certification requirements and national personnel standards in ECSE (Stayton, Smith, Dietrich, & Bruder, 2012).

- **Preservice Preparation (see next section)**

- **Inservice PD.** Through a survey conducted by ECPC I during its first year of operation, it was found that of the Part C systems and 23 of the Part B (619) systems met criteria as having activities in all components of a CSPD. Part C states with PD systems reported that training was most often delivered through workshops (n = 19) or the Web (n = 16), followed by presentations (n = 9) and conferences (n = 8). A majority of states provided CEUs for training (n = 15), and 5 linked training to a credential and 2 to a certificate. Training content was most often identified through administrative and consultant input (n

= 19), and the most popular training areas were service delivery (n = 19), policies and procedures (n = 18), families (n = 11), and disability-specific information (n = 10). Training was evaluated by trainee feedback forms (18), and 5 states used compliance monitoring to further assess training. These findings were similar for Part B (619).

Data collected by Cox, Hollingsworth, and Buysee (2015) had similar findings in regard to type of PD offered in states. They surveyed 831 PD providers from Iowa, Minnesota, Oregon and Virginia using the *Landscape Survey*, created by the National Professional Development Center on Inclusion (NPDCI). The majority of PD focused on children's development and learning, classroom practices, and family communication, with less than half of the PD addressing inclusion and learning for children with disabilities or children from culturally and linguistically diverse backgrounds. Half of the PD consisted of one-time events, with almost a third reporting multiple PD sessions over time, and a few providing PD for the equivalent of one semester.

Lastly, a national study of types of PD experienced by ECI service providers was conducted to see how many were accessing EB adult learning methods (Bruder, Dunst, Mogro-Wilson, & Stayton, 2013). Figure 5 contains the type of in-service experiences they reporting using most frequently. Most of these experiences are not associated with indices of effectiveness (Dunst et al., 2015).

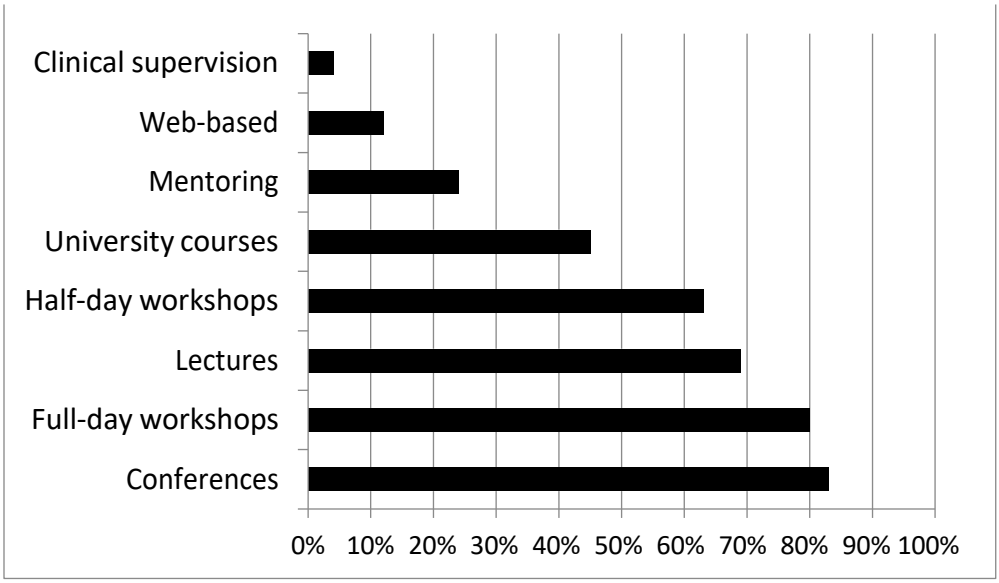


Figure 5. Type of PD experienced by 1,819 service providers in ECI

- **Leadership, Coordination and Sustainability**. The ITCA Annual Survey of Part C coordinators (released September 5, 2017) assessed the status of Part C coordinators in regard to several markers of leadership and sustainability. For example, Twenty-one of the forty-eight coordinators reported their state has a Part C Coordinator with two years

or less of experience and 75% with less than 5 years' experience. A focus group of OSEP TA centers and Part C and 619 coordinators was held in 2016 to examine the issue of sustained leadership. As a result, OSEP is working with the group (that includes ECPC I) on providing ongoing TA to state leadership teams through institutes as provided by ECPC I. The need for leadership is also demonstrated by the 25 state teams who have participated in ECPC I leadership institutes. Both Part C and 619 coordinators and their EC state partner attend a 3 day institute and receive one year of follow up support to implement an EC leadership action plan in their state. Twenty-five state teams have participated in this institute, and 4 state teams will attend an institute in fall of 2017.

A study to determine the knowledge and competency sets that individuals who are engaged in the early intervention and early childhood special education (EI/ECSE) service delivery systems, at any level, (Part C and 619 of IDEA), identified as necessary for effective leadership was recently conducted by Bruns, et al, 2017. The study identified 16 articles that explicitly addressed matters of leadership in EI/ECSE, but few were empirical investigations. A sample of 820 EI/ECSE direct service providers and local administrators completed an Internet-based questionnaire indicating level of agreement to specific statements describing leadership knowledge and competencies. A factor analysis of the results yielded 6 knowledge areas and 5 competency areas considered necessary for effective EI/ECSE leadership: knowledge of child development, evidence-based practices, state laws and regulations, family-centered approaches, federal laws and regulations, and group processes; competencies professional learning, effective relationships, shared responsibility, data use, and effective communication. The study provides guidance for the EI/ECSE field to move forward in preparing and supporting leaders who can meet the needs of young children and their families.

- **Evaluation.** Specific questions were asked of Part C and 619 coordinators by the DaSy center in regard to the presence of evaluation and data systems about personnel (Winer et al., 2015). Nearly two-thirds of states have state data systems containing Part C workforce data (65%). A majority of states have 619 data systems containing data about preschool special education teachers (83%), related services personnel (71%), and general education personnel who work with children receiving preschool special education (71%). About half of state Part C data systems contain information about early intervention personnel such as employment status (e.g., program where employed, position title, years of employment), education (e.g., degree, field of study), and licenses or certification. Only about one-third of state Part C data systems contain information about Part C personnel's demographic characteristics and professional development participation, and only a few contain information about wages.

  Two-thirds or more of 619 data systems contain information about 619 education teachers such as demographic characteristics, employment information, education, and licenses or certifications. Similar to data for Part C providers, only about one-third of 619

data systems contain information about special education teachers' professional development. Almost half contain information about their wages. 619 data systems also contain data about related services personnel and general education teachers. The percentages of states with various types of data for these other personnel are similar to the percentages for special education teachers.

Linkages between child, program, and/or workforce data systems are not common, largely because states do not have program data systems. Only 19% of states linked child and program data systems for Part C, and 31% have such linkages for 619. In addition, for 619, 19% of states have linked child and classroom data. Child-to-workforce linkages are more common for Part C (40%) than for 619 (31%), and 17% of both Part C and 619 programs have workforce-to-program linkages.

States were less likely to report having data systems with workforce data, and even fewer have program data. States with Part C workforce data systems are most likely to have data on licenses/certifications and employment information. Many states reported having 619 workforce data on demographics, employment, education, and licenses/certification. **About half or more of states identified improving workforce and program quality data as a priority for both Part C and 619, and about one-third of states want TA for this area for both Part C and 619.**

1.4 State IHE or Preservice Status. The ECPC I team completed a national analysis across all 50 States of all accredited programs offered (n= 5203) in disciplines and specialty areas (n= 17) related to early childhood education and intervention. Data was collected by using discipline-specific national accreditation (i.e., APTA, AOTA, ASHA, etc.) and state-specific licensing websites to identify the total number of accredited programs offered per discipline/specialty area within each State. The national total of accredited programs per discipline/specialty area include: Audiologist (n=80), Board-Certified Behavior Analyst (n=195), Clinical Psychologist (n=236), School Psychologist (n=171), Hearing Impairment Specialist (n=66), Early Childhood Education (n=986), Early Childhood Special Education (n=190), Blended ECE/ECSE (n=106), Family Therapist (n=176), Registered Nurse (n=1575), Occupational Therapist (n=190), Paraprofessional (n=7), Physical Therapist (n=240), Service Coordinator (n=12), Social Worker (n=688), Speech Language Pathologist (270), and Vision Specialist (n=15).

An average of less than five (5) accredited programs are offered nationally in eleven (11) disciplines and/or specialty-areas, including: Audiologist (n=2), Board-Certified Behavior Analyst/BCBA (n=4), School Psychologist (n-3), Hearing Impairment Specialist (n=1), Family Therapist (n=4), Occupational Therapist (n=4), Service Coordination (n=0), and Vision Specialist (n=0). More specifically, discipline/specialty-areas directly related to early childhood education for children with disabilities averaged amongst the lowest, including: Early Childhood Special Education (n=4), Blended ECE/ECSE (n=2), and Paraprofessional (n=0). A more recent update of the status of IHE by state and personnel category is in Appendix A and at ECPCTA.ORG. **These data will be updated as part of the final survey to be completed by ECPC I during the last quarter of 2017.**

Additional data on the existence of preservice indicators and elements within states that participated in ECPC I are shown in Figure 6 as measured by the self-assessment for the EC systems framework. The data represent a snapshot of state level capacity in the area of preservice and IHE indicators of quality.

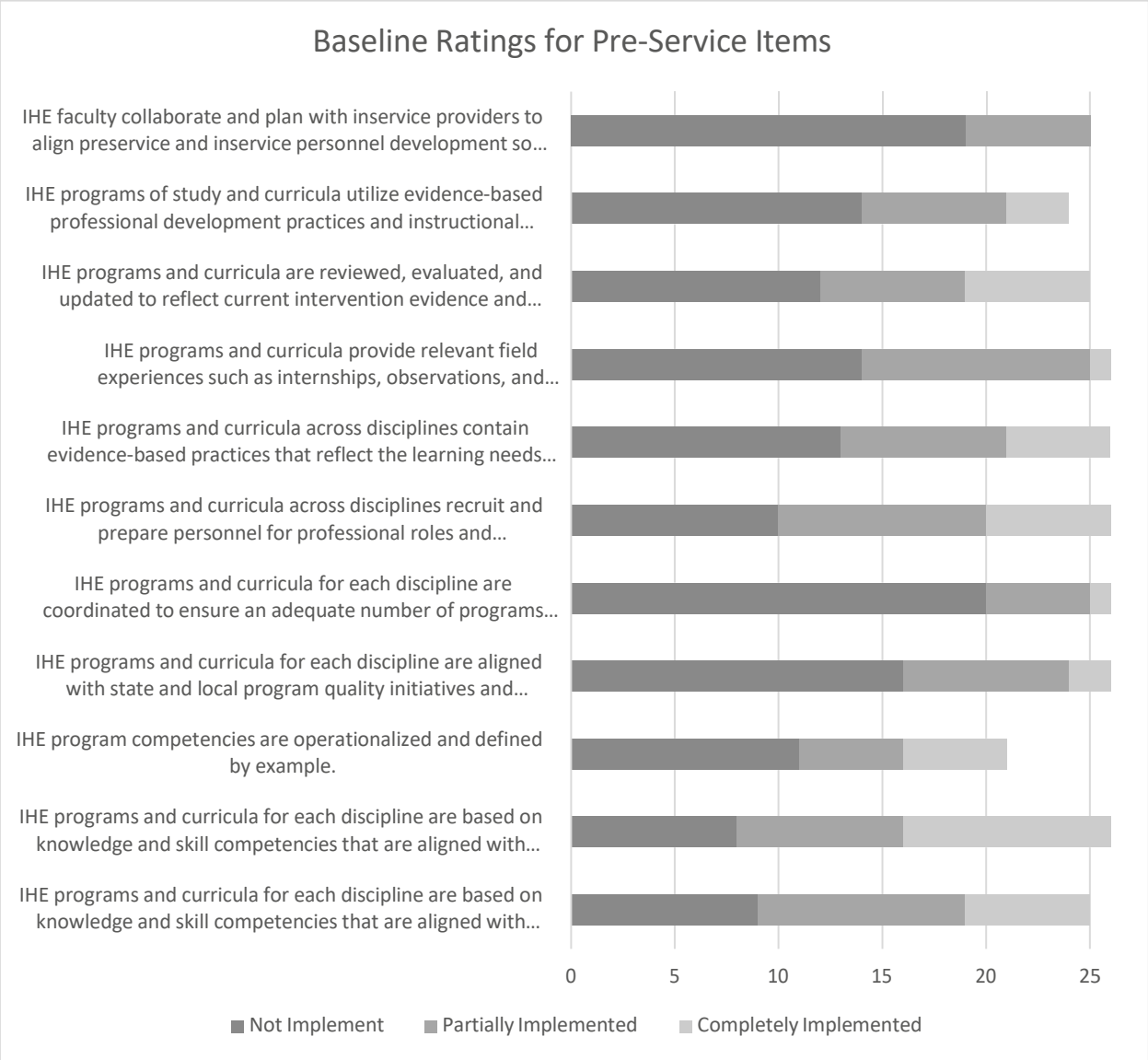


Figure 6. Baseline self-ratings for each item in the pre-service subcomponent of the personnel framework for 25 states.

In regard to content of IHE programs, Dunst and Bruder (2005) also assessed the presence of recommended ECI practices in coursework at 155 IHEs. Survey results revealed absences in a number of pedagogical areas such as family-centered practices, child-focused practices, LRE, natural environments, team process, and service coordination as well as a lack of faculty preparation to teach these areas. These findings were similar to findings in studies about

the availability of ECI relevant coursework at IHEs (Bailey, Buysse, & Palsha, 1990; Bailey, Palsha, & Huntington, 1990; Dunne, 2002; Miller & Stayton, 1998).

More recently, a survey about the availability of program content and methods classes related to ECI was completed on IHE programs across 17 professional disciplines in all 50 states as part of CIPP (Bruder, 2010). IHE programs reported as much variability within a discipline as there was across disciplines in regard to hours devoted to specific course content related to ECI. Of more concern was that many aspects of ECI service delivery under IDEA were not addressed. The most critical finding was that the majority of personnel programs prepared students for a life span license or certification. Other surveys of IHE coursework on disability-related pedagogy have also reported limitations in content offered for ECI practitioners, at all levels of preparation at 2 year (associates degree), 4 year (bachelor's degree) , and graduate level (masters and doctoral degrees) (Chang, Early, & Winton, 2005; Dunst & Bruder, 2014; Ray, Bowman, & Robbins, 2006; Snyder et al., 2012; Woods & Snyder, 2009).

Most disconcerting is the fact that the lack of appropriate preservice programs of study in ECI results in a workforce who do not feel confident, nor competent, in providing ECI in recommended practice areas as illustrated by data collected from over 1800 service providers across the country (Bruder et al., 2013). Data from this study is on Figure 7.

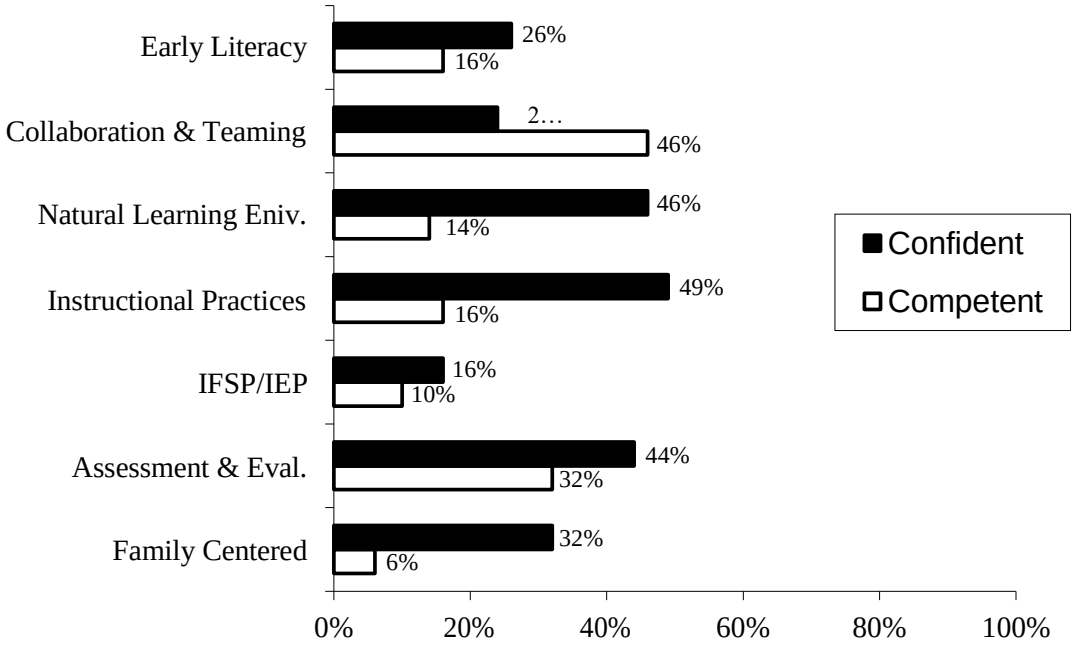


Figure 7. Service providers rating of their confidence and competence in ECI domains of practice. N=1,084 (Part C); N=735 (619).

2. The importance and magnitude of the results or outcomes likely to be attained.

The previous section portrays the need for a high quality TA center for early childhood personnel. The following section will provide data and plans to support the results expected to be attained as a result of the proposed set of goals, objectives and activities of the ECPC II.

2.1. Past Performance of ECPC I and Evidence of Results and Outcomes. During the past 4.75 years, ECPC I has successfully provided universal, targeted, and intensive TA to 31 states and stakeholders representing EC professional disciplines and cross sector organizations. Our **universal TA** resulted in 107,268 separate visits to our website to access and down load ECPC information and materials. **Targeted TA** resulted in (1) 4 states aligning state personnel standards with national personnel standards; (2) 6 leadership training institutes for Part C and 619 teams from 25 states to facilitate their integration within their state EC personnel plans, policies or practices. While all 25 of the state leadership teams demonstrated growth in the achievement of the action plans they developed (total 77 goals across 25 states), 24 states focused solely on inclusive policies, practices or personnel preparation and Figure 8 contains the distribution of the types of activities from their action plans.

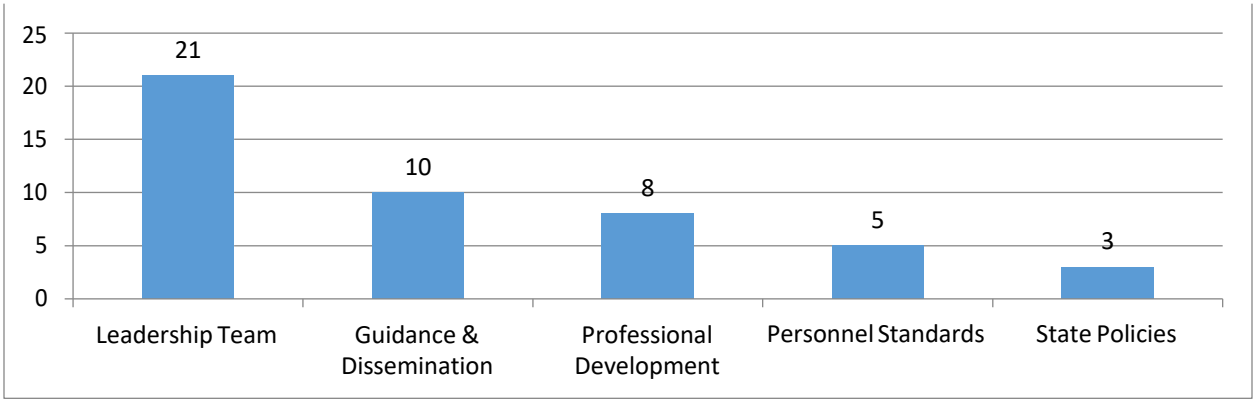


Figure 8. Frequency of inclusion focus areas of ECPC leadership state action plans (n=24)

The first IHE Faculty Leadership Institute occurred in collaboration with the AUCD in the fall of 2016. AUCD represents the 67 University Centers of Excellence on Developmental Disabilities (UCEDDs) and the 52 Leadership Education in Neurodevelopmental and Related Disabilities (LEND) programs. The model used for this institute was developed by Bruder, Lippman and Bologna (1994) (OSEP funded) and had resulted in 38 IHE faculty from 15 colleges and universities revising and expanding their syllabi and programs of studies to reflect evidenced based practices in ECI.

Table 2 contains information on the IHE action plan goals in process for 49 IHE faculty who attended the ECPC I AUCD personnel institute for faculty and PD providers.

Table 2. *Goals in Action Plans for 49 UCEDD or LEND IHE faculty*

Theme	Definition and Examples	Total Frequency	%
Identify current personnel standards and conduct alignments or analyses to determine cross-agency and cross disciplinary standards	Aligning personnel standards for agencies with state level personnel standards, also including an alignment of pre-service and in-service personnel standards	2	4.08%
Identify current training and develop new training opportunities based around inclusion in early childhood	Developing training for personnel in early childhood through UCEDD work around inclusive practices	4	8.16%
Conduct needs assessments or collect data of current personnel initiatives in early childhood	Identifying current state initiatives in inclusion, including using data to inform decisions in UCEDD strategic planning decisions to incorporate inclusion as an area of focus	9	18.37%
Revise or update curriculum, including LEND programs and other IHE programs that include licensure or endorsements to emphasize early childhood inclusion	Reviewing current curriculum of LEND programs and other IHE personnel preparation programs, and making updates to include coursework on inclusion or projects on inclusion	10	20.41%
Create and disseminate policy and practice documents across key state stakeholders	Identifying agencies and personnel to disseminate current policies on inclusion, and current training offerings	10	20.41%
Identify and develop an inclusive stakeholder team	Identifying key stakeholders across agencies, including families, in current initiatives in early childhood inclusion	14	28.57%

Intensive TA was provided to 12 states to build integrated EC CSPDs. Cohort 1 states that received intensive TA completed the development of their EC CSPD, and the other 8 are on track to complete their plans at the end of this ECPC I funding.

One bonus of all our work in states is the cross discipline and cross sector collaborations that have resulted from both our intensive and targeted work in states. E**ach state-level strategic planning team participating receiving intensive TA** (N=12 states across 3 cohorts) had representation from the following types of cross sector and cross discipline personnel (total n=251): 619 (n=27), Part C (n=25), State Early Childhood Agency (n=22), HS (n=13), Other Early Childhood (n=17), Child Care (n=10), Family Representative (n=12), Program Administrators (n=21), Practitioners (n=12), Technical Assistance and Inservice Training Providers (n=27), IHE Faculty (n=40), Licensure (n=9), State Data Systems (n=11), and Race to

the Top (n=5). **The same variety of cross sector representation occurred at the Leadership Institutes**, each state-level leadership team (N=25 states) had representation from the following types of cross sector and discipline personnel (total n= 168): Part C (n=39), 619 (n=32), HS (n=11), Child Care (n=6), Home Visiting (n=1), Preschool (n=5), IHE and UCEDD (N=21), Family Members (n=18), Graduate students (6), Early care and education (5) and other state-determined early childhood professionals across various areas (n=24). Other state-determined early childhood professionals include Early Learning Challenge- Race to the Top, Licensing, CSPD chairs, Help Me Grow representatives, and Training and Technical Assistance.

On additional outcome of our cross disciplinary efforts has been the establishment of a work group of representatives from different discipline organizations (AOTA, APTA, ASHA, CEC, DEC, NAEYC, and Zero to Three). The group completed cross-discipline alignments of personnel competencies and standards. **Four areas of cross-disciplinary competencies were identified and endorsed by the organizations: Family-Centered Practice; EB interventions; Teaming and Collaborations and Professionalism, Advocacy and Ethics.**

Lastly, results from our evaluation of ECPC I efforts over the course of the past 4.5 years indicate that 97% (85/88) of our internal progress monitoring activities were met, and our external evaluation objectives and performance measures are on track to meet all benchmarks at the end of our current 5 year funding cycle. For example, as shown in Figure 9, there was overwhelming positive satisfaction by 577 TA recipients across types of TA activities.

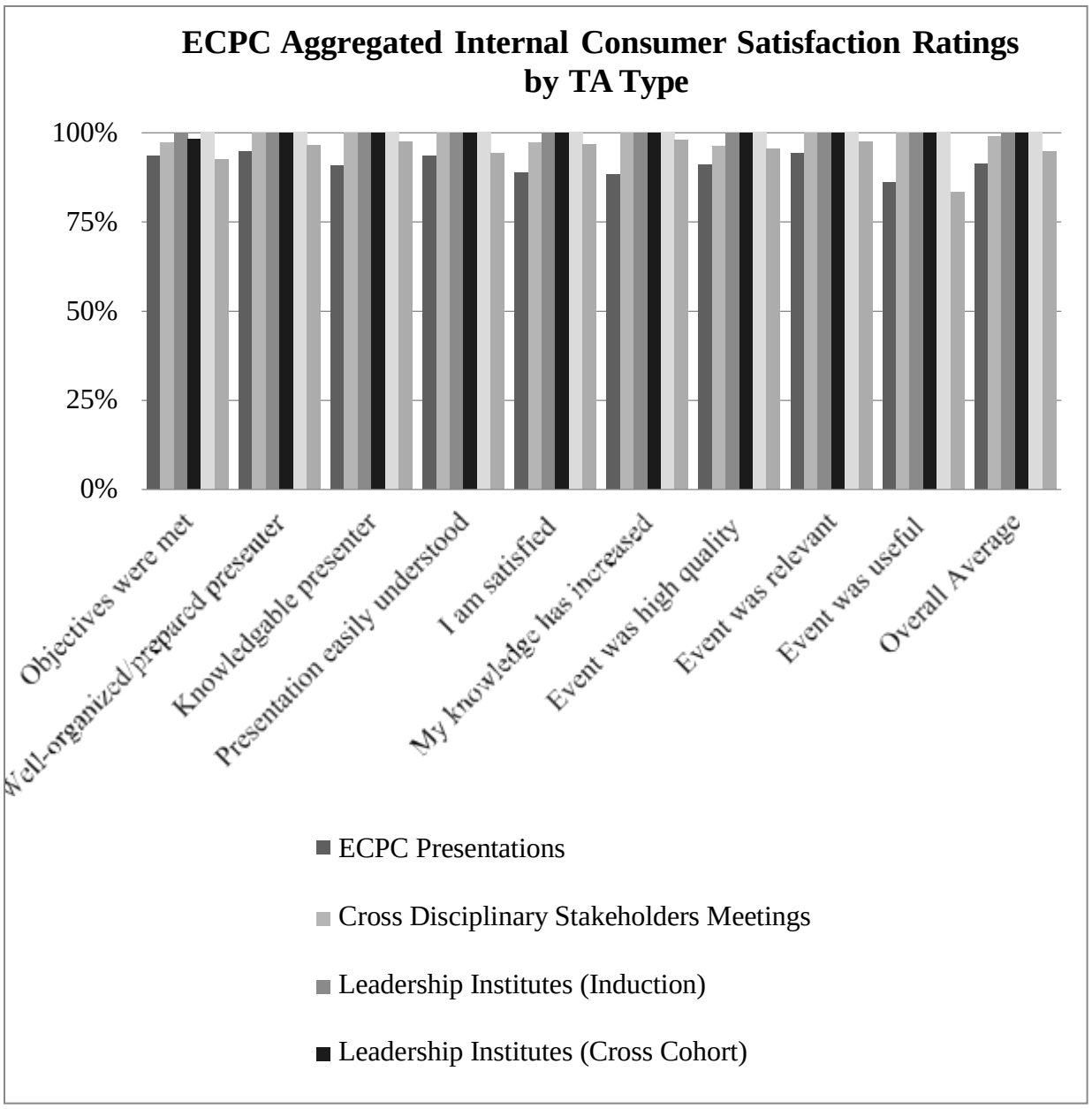


Figure 9. Aggregated results for items from ECPC I's consumer satisfaction surveys. The data is disaggregated by the type of TA.

2.2 Importance and Magnitude of Proposed ECPC II TA on ECI Personnel Systems.

Proposed TA to be provided by the ECPC II. As identified in subsection 1 of the Significance section of this proposal, the context of ECI personnel development is characterized by the growing numbers and diversity of the ECI population and the varied environments where they spend their time and learn (home, child care, HS, formal PreK programs). This is compounded by a diverse and undertrained workforce and the complexity of competencies needed by personnel to meet the growing and diverse needs of ECI population, wherever they are learning. There is a lack of infrastructure within state and local personnel development systems, and a resulting reliance on ineffective training mechanisms (e.g., conferences, one time workshops without follow-up). ECI systems are also experiencing challenges in identifying, training, and supporting qualified instructors and other personnel development specialists to deliver evidenced-based education and training to ECI practitioners. Yet, it is clear that the federal and state focus on EC and ECI, and the resulting increases in EC programs will continue. **What is less clear is how ECI systems will meet the current and future need for well-trained personnel, representing different disciplines, educational backgrounds, and learning styles, to deliver EBP to eligible infants and young children under IDEA, across a variety of EC settings, and, in collaboration with EC staff.**

The workscope proposed in the next section of the proposal will address the methods we will use to address the systems issues identified above. Based on the aggregate data that were collected over the past 4.75 years, we are proposing a work scope that is ambitious, yet meets all the required center criteria of the RFP (see work scope in Appendix A). The objectives and activities are achievable, as demonstrated through our work on ECPC I. All personnel have worked together in the ECPC I, and the additional funding provided for this proposed center (double that of ECPC I) will allow (1) a fiscal commitment to partner organizations to facilitate their active participation in the development and review of all center resources, materials, tools and TA activities; (2) a fiscal commitment to those who will participate in the cross discipline work group; (3) the expansion and use of expert consultants who will expand the knowledge base and develop TA resources, materials, tools and services. These experts will focus on the development of knowledge and tools that will be used to support TA in the areas of adult learning, coaching, inclusion, and scaling up; (4) the expansion of our collaborations into and across the EC sectors of PreK, CC, HS, EHS and HV at the national, state, and local levels; and (5) the expansion of resources, materials, and tools for use by state administrators, IHE faculty and PD providers to enhance courses and PD activities through collaboration with DEC, IHE consultants and other TA partners.

The specific TA activities we propose to provide through the ECPC II Center to meet the requirement of the RFP includes the following:

- Intensive TA to build CSPDs in 8 new states, and expand and scale out (across EC agencies and programs) and down (to regional and local programs) within the 12 states involved in ECPC I. Each state will use a strategic planning process to develop a plan and activities across each of the six subcomponents of a CSPD;

- Targeted TA to 25 state teams through a leadership institute and continue to provide TA to our original 25 state teams from ECPC I through the provision of resources, material and tools and collaborations with OSEP TA centers. We will also provide training through a leadership community of practice to new Part C and Part B (619) coordinators. The content of these trainings will be jointly developed and implemented with OSEP TA centers and will include using evidenced based practices in the areas of: a) leadership; b) inclusive service delivery; c) effective training and coaching models; d) TA implementation and evaluation; and e) implementation strategies to scale up effective inclusive program models using implementation supports including the DEC RP. Follow-up TA will be provided for each state team or new coordinator for at least one year after attendance at an institute to assure implementation and evaluation of measurable outcomes for each state.

- Targeted TA to a) All OSEP funded Personnel Preparation Programs; b) All 69 University Centers of Excellence in Developmental Disabilities; c) All 53 Leadership Training Programs in Neurodevelopmental Disabilities at IHEs; d) All IHE and PD trainers in each of the Intensive States; e) IHE programs who will attend one day institutes at Partner organization meetings (e.g. AOTA; APTA; ASHA;CEC; DEC;TED; NAEYC; Zero to Three;); f) Doctoral students and Post Doc students in EC,ECI or a related field through a yearly institute on innovative systems design, the scaling up of EBP and effective personnel training models that result in positive and measurable outcomes for infants, young children and their families. Follow-up TA will occur with each IHE faculty or PD provider for at least one year after attendance at an institute, to ensure implementation and evaluation, and sustainability of measurable outcomes.

- Other TA activities as described in the next section

This ambitious TA objectives will be feasible because of a number of TA Center implementation supports instituted during ECPC I. The ECPC I developed a foundation of success from specific features that contributed to its high productivity and collaborations with other TA centers, partner organizations, state administrators and IHE faculty. **These included Principles of Operation,** which we will adopt to guide ECPC II:

1) A theory of change which focused on state system infrastructure for personnel and guided all center activities;
2) An ambitious work-scope organized by goals, and measurable objectives that provided a structure for implementation and evaluation;
3) Collaborations with other OSEP TA centers and partner organizations that extended the impact of center objectives;
4) Participation and stakeholder (including families) involvement in all phases of the center to ensure the validity and sustainability of project activities;
5) The use of adult learning principles to guide all training, technical assistance and dissemination (both general and targeted) activities;
6) TA focused on the adoption and scaling up of evidenced based solutions to systems-wide problems;
7) Evaluation conducted in a comprehensive, methodical, and rigorous manner;
8) An experienced, consistent, cohesive and dedicated staff of key personnel who jointly managed the center and shared a vision and commitment to the integrity of the ECPC, and its mission.

In addition to the above principles, **we will adopt a principle to**

9) **Minimize system complexities through simple straightforward methods of operation.** This will pertain to all components of the project, from communication strategies to state level strategic planning to evaluation.

This principle was proposed by Bruder (2016) as a strategy to address the multifaceted challenges of personnel development (see Figure 2). In doing proposing the principle, she referenced the US Navy who is responsible for identifying and institutionalizing the term in 1960. At that time, the Navy struggled with having to shift their paradigms for operations to accommodate the increasing complexity of their work and growing and different demands (e.g., nuclear threats, collaboration with other armed forces). As a result of this need, the Navy adopted the KISS principle to address the new factors that governed their world.

This principle proposed that most systems work best if they are kept simple rather than made complicated; therefore simplicity should be the key goal in systems design, and unnecessary complexity should be avoided. Though the field of EC and ECI personnel development is complex as represented on Figure 2 and as identified through the work of the National Institute for Medicine, National Research Council (Allen & Kelly, 2015b), the KISS principle guided the activities of the ECPC I and will continue to guide and inform all activities proposed for ECPC II.

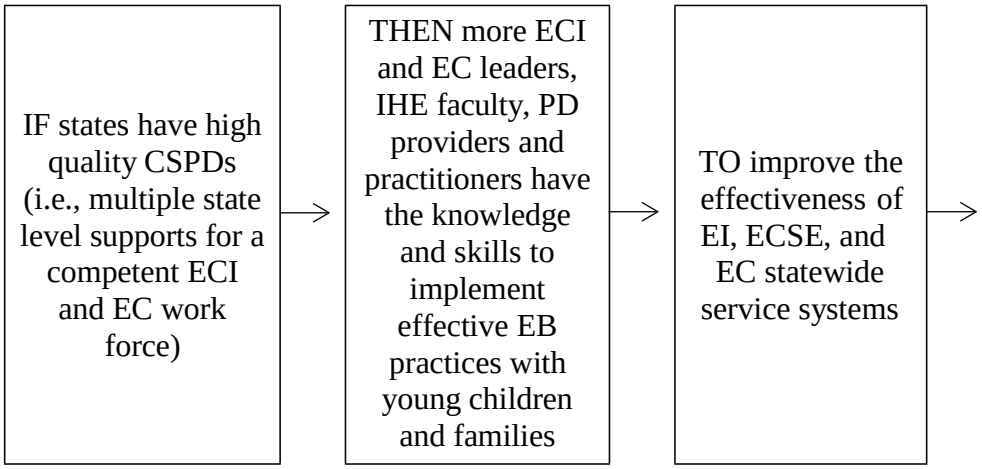
Proposed Personnel for ECPC II. All key staff, collaborators, partners, consultants and staff from ECPC I will remain on ECPC II thus guaranteeing that we have a management team with expertise to implement the major initiatives of a TA center. Bruder, as director, has been in the field of EC and ECI personnel preparation for 40 years. Co-directors Sugai and Stayton bring complementary areas of expertise: Sugai on multi-tiered and effective models of state TA; Stayton on EC and ECI personnel standards, RP and IHE programs' of study. The Associate Directors also bring a focus and expertise to areas critical to the success of ECPC II. Dunst will oversee the identification of knowledge to inform all TA resources, materials and tools to insure they are EB and socially valid for the populations targeted in this TA proposal. Sopko has a long history in providing state TA and national TA, most recently through ECPC. McWilliam will oversee the scaling up and down of EB practices in personnel development to ensure a systemic approach to the adoption and scaling up of CSPD infrastructure sub components and EB practice. As chair of the Department of Special Education at the U of Alabama, Dr. McWilliam is also a member of the HECSE. As such, he will be the liaison with all Special Education Programs in the country and he will also participate in the Leadership Institute we will implement for Doctoral and Post Doctoral Students. Caron will leverage her long experience across federal agencies and state EC systems to insure we are involving all levels of the EC system in ECPC II TA activities. We are building the capacity of future leaders in the field of ECI by putting two graduates of the ECI OSEP Doctoral Leadership Program (directed by Bruder and Sugai) into leadership roles on ECPC II. George-Puskar will be program coordinator, and Howe will be evaluation coordinator. They have gained experience on both ECPC I and the PBIS Center.

We feel the team we have assembled represents an experienced group of professionals dedicated to the provision of technical assistance. All other personnel have successful histories providing EC state and national TA, and all have experience scaling up to EB practices and building capacity across states. A strength of this proposed TA center is the number and depth of collaborations with EC contractors, consultants, organizations and TA centers. We have received 126 letters of support across a variety of categories to support our proposal. Categories include Collaborating Technical Assistance Centers (n=9); Cross Disciplinary Partner Organizations (n=24); New States Requesting TA Support (n=17 with 19 letters of support); **Intensive and Targeted Leadership States Requesting Continued TA (n=21 with 23 letters of support); Institutes of Higher Education Requesting TA** including UCEDD/LEND programs that previously participated in Leadership Summit (n=13); **State systems Interested in Future Collaboration and Training Opportunities (n=21);** and Expert TA Consultants and Leadership Faculty (n=17). A list of all letters received is in Appendix C along with sample letters from each category. To view all letters received, access them at

ftp://ftp.mayachristy.com/. The user name is ECPC-UCONN@mayachristy.com and the password is eCpCta!

All center directors, staff, contractors, consultants, and partner organizations have reviewed the work scope and have agreed through letters of support and commitment to fulfill their specific responsibilities (see Personnel section for list of these personnel; work scope descriptions in Appendix A, Key Personnel Bios in Personnel Section, and Vitae in Appendix B. Subcontractors and consultant bios are in Appendix B).

Theory of Change. There are many theories of change in the literature and in practice to guide personnel development research and practice (see Bruder, 2016). One of the most notable recommends a focus on child and family outcomes as the unifier to PD (Guskey, 2001, 2014). This focus is not new to ECI as identified by Bruder (2016) and Strain (in press). As TA Center, the ECPC I used a theory of change to illustrates the relationship between the TA recipients and child and family outcomes in a straightforward and uncomplicated manner using the KISS principle. The ECPC II center proposes to use an adapted version of this change model, which shows the focus on building system capacity by scaling up the core features of an infrastructure framework of a CSPD from which research, and practice will be supported. The ECPC II will develop implementation supports for service delivery providers, however, we propose that our primary target is statewide systems, administrators, IHE faculty and PD providers. We will collaborate with other TA providers (e.g., ECSTAC) to implement services at a local level, but our prime focus at that level of implementation. The theory of change we will use to guide all Center TA activities is illustrated on Figure 10.



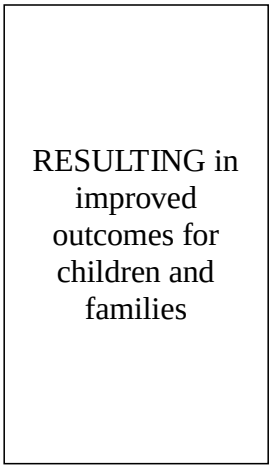


Figure 10. Theory of Change for ECPC TA Center II

B. Quality of Center Services

Strategies for ensuring equal access and treatment for eligible center participants

The Center will insure that there are no barriers to access and participation in any sponsored activities per federal and state law. All activities will include members of the target population for this center (state and local agency staff, IHE faculty, professional development providers, EC and ECI staff, and families), and when membership for specific activities are needed, we will prioritize the recruitment of members from groups that have traditionally been underrepresented. We have dedicated a staff member's (Freyre) time to assuring this occurs across all sites, and to assist in identifying accommodations for any and all participants as needed.

Targeted, active, and formalized strategies will be implemented to advertise and recruit for Center TA consultant positions. Wherever possible, the center directors will work with Diversity Committees of state and local professional organizations (e.g., the Human Rights and Cultural Diversity Committee of the Council for Exceptional Children's Division on Career Development and Transition; the Cultural and Linguistic Diversity Committee of CEC's Division for Learning Disabilities) to identify diverse participants. In addition, deliberate recruitment will consist of personal telephone calls, planned visits, and direct solicitation of individuals who advise/supervise individuals who have center backgrounds or personal histories related to Center goals and objectives. High priority will be given to advertising for and recruitment to individuals who are from underrepresented culturally and linguistically diverse populations and persons with disabilities.

All Center recruitment materials will clearly state that we encourage participants with disabilities and from minority groups, and all recruitment materials describing the center will state the availability of accommodations, including the translation of any materials into other languages or Braille, physical accommodations, and any other adaptations and assistance that is required (e.g., TTY line). All web notifications will be accessible to individuals with disabilities. In addition, as on past funded centers, the UCEDD (host applicant) advisory board **who** consist of individuals with disabilities and/or parents of individuals with disabilities will be consulted to provide external guidance to the center staff on the recruitment of underrepresented minorities for center activities.

(i) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

There are no there commonly adopted definitions of TA in education or special education (Blase, 2009, p 2)**.** Further, a recent research synthesis of the literature on TA (Katz, 2015) suggests there is a noticeable absence of widely recognized standards for high-quality TA (p.60). Katz' review did summarize characteristics found to be associated with positive TA outcomes:

1) TA techniques are not sufficient, and should be augmented with relationships. Trust, collaboration, respect, and encouragement were frequent supports to effective TA;

2) Relationships are not sufficient and should be augmented with techniques using goal that are specific, measurable, attainable, realistic, and time-bound, or there is a risk that the TA will not be accomplished.

One of our partner organizations (NAEYC) defined EC Training and TA to guide the early childhood field, and these definitions guided ECPC I. We will continue to use them as stated to structure the goals and objectives to achieve the outcomes of the ECPC II TA center:

Training is a learning experience, or series of experiences, specific to an area of inquiry and related set of skills or dispositions, delivered by a professional(s) with subject matter and adult learning knowledge and skills. A planned sequence of training sessions comprises a training program; and

Technical Assistance is the provision of targeted and customized supports by a professional(s) with subject matter and adult learning knowledge and skills to develop or strengthen processes, knowledge application, or implementation of services by recipients (Early Childhood Education Professional Development: Training and Technical Assistance Glossary, NAEYC & NACCRRA, 2011).

Characteristics of TA were also described in the Glossary, and they complement those found in the literature synthesis (Katz, 2015). They will guide TA activities in ECPC II. TA:

- Supports the reflective processes that professionals need to translate the theories and information learned through education and/or training into best practices.
- May include mentoring, coaching, consultation, PD advising, and peer-to-peer TA.
- May use strategies that are discrete processes, or used as part of education and/or training programs.
- Should be embedded in the recipient's broader professional development plan.
- Is relationship-based and builds positive, trusting, and respectful relationships.
- May be delivered by an individual or a team, to one individual or a group
- May include combinations of information and resource dissemination and referrals, coaching, mentoring, consultation, and professional development advising, peer-to-peer TA, as well as other forms of support.
- May use varied levels of duration and intensity depending on need and resources.
- May be provided face-to-face, through distance, technology-based, or hybrid methods.

A list of the goals, objectives and number of associated activities for the proposed ECPC II are on Table 3. A detailed work scope with objectives, activities, person loading, and time lines is in Appendix A, and the evaluation plan delineates the outcomes to be achieved for each objective and activity. A systematic and methodological approach will be applied within each goal area and multiple methods will be used to measure the outcomes that will result from each objective.

Table 3.
Goals, Objectives, and Activities of the ECPC II

Goal 1 **Identify or Develop and Advance the Knowledge Base**

1.1 Conduct Literature Synthesis on EB TA Practices
(Activities: 1.1.1-1.1.2)

1.2 Expand, Update and Revise State Personnel Standards Across EC Disciplines
(Activities: 1.2.1-1.2.6)

1.3 Identify and Synthesize Implementation Supports For IHE Faculty and PD Providers
(Activities:1.3.1-1.3.4)

1.4 Identify and Synthesize Evidenced Based Practices for State IDEA Part C and 619 Administrators on leadership and other administrative supports
(Activities: 1.4.1-1.4.5)

1.5 Identify and Synthesize Evidence Based Practices for subcomponents of a CSPD
(Activities: 1.5.1-1.5.6)

1.6 Revise the Personnel Framework Self-Assessment for a CSPD
(Activities: 1.6.1-1.6.3)

Goal 2 **Identify or Develop Resources, Materials, and Tools for TA**

2.1 Collaboratively Develop Tools to Measure EB TA Practices and TA Readiness with other OSEP TA Centers
(Activities: 2.1.1-2.1.6)

2.2 Identify or Develop Resources to Illustrate Cross Disciplinary Core Competencies and Standards
(*Activities: 2.2.1-2.2.3; Sub-Activities: 2.2.2.1-2.2.2.3)*

2.3 Identify or Develop Resources for IHE Faculty and other PD Providers
(Activities: 2.3.1-2.3.4; Sub-Activities: 2.3.1.1-2.3.1.5; 2.3.2.1-2.3.2.9; 2.3.3.1-2.3.3.7; 2.3.4.1-2.3.4.7)

2.4 Identify or Develop Resources for State IDEA Part C and 619 Administrators
(Activities: 2.4.1-2.4.8)

2.5 Identify or Develop Resources to Assist State Administrators to Implement a CSPD.
(Activities: 2.5.1-2.5.5)

Goal 3 **Provide Technical Assistance**

3.1 Provide Universal TA through Website to Disseminate Resources, Materials and Tools
(Activities: 3.1.1-3.1.8; Sub-Activities: 3.1.1.1)

3.2 Provide Universal TA to through the Publication and Dissemination of Practice Guides, Checklists, Consensus Papers, Briefs and Articles
(Activities: 3.2.1-3.2.3)

3.3 Provide Universal TA to through Presentations, Meetings, Webinars, and Workshops
(Activities: 3.3.1-3.3.4)

3.4 Implement Targeted TA through Leadership Institutes for IHE Faculty and PD providers
(Activities: 3.4.1-3.4.8)

3.5 Implement Targeted TA through Leadership Institutes with Part C, 619 and EC Administrators
(Activities: 3.5.1-3.5.7)

3.6 Provide Intensive TA to 12 States from ECPC I to Expand the State CSPD
(Activities: 3.6.1-3.6.6)

3.7 Provide Intensive TA to 8 States to Develop a CSPD to Scale
(Activities: 3.7.1-3.7.6; Sub-Activities: 3.7.6.1-3.7.6.6)

Goal 4 **Leadership and Collaboration**

4.1 Develop Shared TA Content, Products, Methods and Systems across Federal TA Centers
(Activities: 4.1.1-4.1.9; Sub-Activities: 4.1.2.1-4.1.2.4)

4.2 Collaborate with EC Organizations across Sectors for all center Goals and Objectives
(Activities: 4.2.1-4.2.8; Sub-Activities: 4.2.2.1-4.2.2.4)

4.3 Work with Partner Organizations to Identify and Leverage Additional Resources
(Activities: 4.3.1-4.3.5)

Goal 5 **Management and Evaluation**

5.1 Develop and Maintain the Center Infrastructure
(Activities: 5.1.1-5.1.9)

5.2 Establish Communication with OSEP
(Activities: 5.2.1-5.2.4)

5.3 Support Diversity and Inclusion throughout Center Activities.
(Activities: 5.3.1-5.3.3)

5.4 Evaluate All Center Objectives and Outcomes.
(Activities: 5.4.1-5.4.3)

(ii) The extent to which there is a conceptual framework underlying the proposed activities and the quality of that framework

The overarching theme of our work plan is the implementation of high quality TA to build the capacity of state systems of ECI to develop, implement and sustain an integrated EC CSPD. The ECPC II will focus its TA on identifying, implementing and evaluating **implementation supports** to enable all target populations to facilitate or deliver effective high quality **EB intervention practices** through inclusive services and programs through statewide and local applications of an early childhood CSPD**.** This distinction is important as the adoption of EBP is dependent on **implementation practices used by trainers** and TA staff to facilitate the use of **intervention practices by practitioners** to create predetermined outcomes of interest (Dunst, 2013; D.L. Fixsen, S.F. Naoom, K.A. Blase, R.M. Friedman, & F. Wallace, 2005). For example, the adoption and use of intervention practices by practitioners or parents are the outcomes of implementation practices, and the improvements in a child's learning and development are the outcomes of the intervention practices Dunst (p 87).

The ECPC conceptual framework is modeled after Bronfenbrenner (1977) ecological model of development because of its acknowledgement and accommodation to multiple influences on child's development; and, a child's development in the context of a TA center focused on creating EC systems that will support the preparation and continued education of a workforce that provides effective services, supports and experiences to a child and family. We also used a backwards mapping approach (see Guskey, 2000, 2001, 2014) to address the classes of variables that will facilitate improved child and family outcomes.

The ECPC II conceptual framework is shown in Figure 11 and it addresses the scope and depth of ECPC II objectives and activities. Six concentric spheres of influence that relate to improved child and family outcomes represent the foundation of the Center and will guide all the implementation of TA. The first ring of the model depicts the early childhood workforce, which is made up of a diversity of early childhood professionals and para professionals who directly affect both children's development and family functioning. A competent early childhood workforce is built by systematically infusing quality and recommended early childhood practices into services and programs for children and families, which is described in the second ring of our conceptual model. High quality practices, services, and programs are achieved through a coordinated statewide CSPD, which is comprised of six subcomponents: leadership, personnel standards, recruitment and retention of personnel, preservice personnel development, in-service personnel development, and evaluation. These subcomponents are represented in the third ring of the model and are the critical components of ECPC II TA. The TA will be provided to assist state systems of ECI develop state wide CSPDs by building knowledge, developing resources and materials, tools and offering universal, targeted, and intensive technical assistance to state leadership teams, as represented on the fourth ring of the model. The breadth and scope for the work of the center will be expanded through collaborations with a variety of stakeholders across the field of early childhood including; IHEs, other TA centers; and EC and Special Education

organizations. Collaborations will occur through joint participation in the design, validation and dissemination of resources, materials and tools and TA activities using effective practices that lead to a high quality, competent early childhood workforce as shown in the fifth ring of the model. This broad, complex, and in-depth work is held together with a comprehensive management system that includes center directors and staff, as well as contractors and consultants from across the country. This sixth ring of the framework places a strong emphasis on the use of evaluation data to monitor and inform Center decision-making, using both internal and external strategies and multiple sources of data.

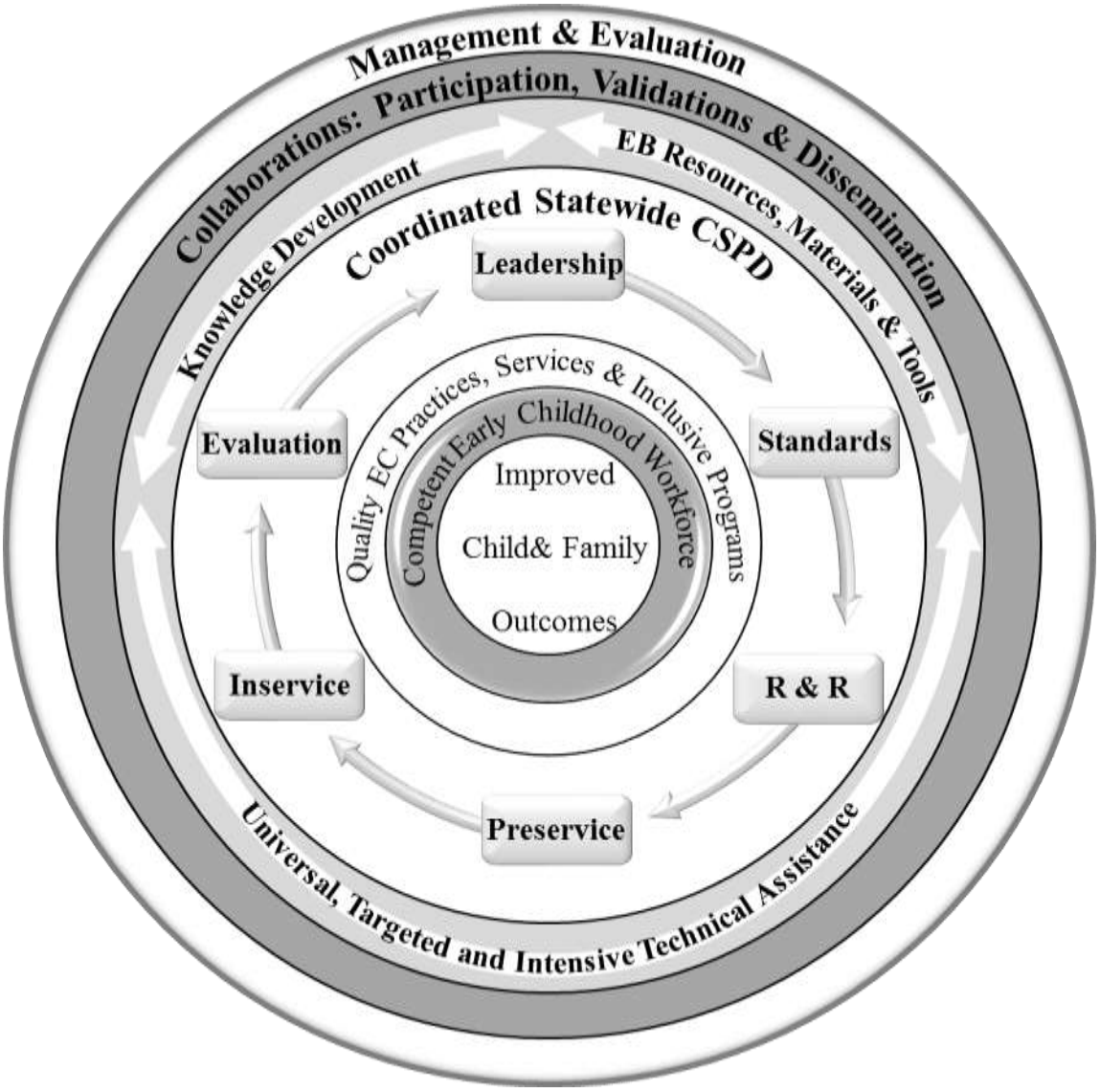


Figure 11. Conceptual framework and model that will guide the development, implementation and evaluation of ECPC II activities to improve the early childhood personnel workforce.

(iii) The center services reflect up-to-date knowledge from research and effective practice.

Capacity is usually defined as the ability to do something, where ECI capacity is ultimately measured in terms of practitioner ability to add value to desirable outcomes for young children with disabilities (Dunst, 2009). **The overarching theme of our conceptual framework and work scope is the implementation of high quality TA to build capacity of state systems of ECI to develop, implement and sustain an integrated EC CSPD.** The ECPC II implementation process will be designed to build the capacity of state and local ECI and EC administrators, IHE faculty, PD providers and ECI and EC programs to develop effective practices, refine existing policies, and to employ and coordinate new implementation strategies to support the widespread adoption and use of RP practices having desired and valued outcomes.

We feel the most helpful and meaningful technical assistance is that which includes performance-centered learning. The overriding goal of training and technical assistance is to ensure that participants are able to implement, with high levels of fidelity, evidence-based practices. Studies have demonstrated that as much as 85% of all learning occurs on-the-job when people "need-to-know" (Raybould, 2000). However, many TA efforts in EC are provided without regard to a learner's need to know and tend to conform to a "one shot" model, as represented in designated professional development days, workshops planned away from the work setting, and so on. In a performance-centered approach, technical assistance takes the form of performance support in the actual job setting. This approach was originally developed for applications to online learning, but has evolved to more broadly encompass other ways to support learning, and has also been extended to teacher education practices. With performance-centered learning, the prime focus is on what learners need to know when they need to know it. Resultant performance support (i.e., technical assistance) is provided through "learn and do" approaches (such as coaching, supervising, etc.), in actual practice setting (home, school, community), enabling the learner to acquire simultaneous knowledge and skills.

Through this performance-centered lens, our training and technical assistance activities will focus on the effective implementation of training systems (higher education and professional development) by high quality personnel through principles of adult learning (Dunst et al., 2015) as synthesized by ECPC I. The findings from the research meta-synthesis on adult learning conducted during ECPC I will be used to guide all TA and training applications (see Dunst, Bruder & Hamby, 2015; ECPCTA,ORG). Specifically, evidenced based training practices include the following components:

1. Explicit explanations and illustrations of content or practice to be learned
2. Active and authentic job-embedded opportunities to learn the new practice
3. Performance feedback on the implementation of the practice
4. Opportunities for reflective understanding and self-monitoring of the practice implementation
5. Ongoing follow-up supports

6. Sufficient duration and intensity of training to provide multiple opportunities to become proficient in the use of a practice

The practices are not new, nor are they unique to ECI or EC. They are being used with the states receiving TA from ECPC 1 as a rubric to guide training and to inform IHE faculty and PD providers how to teach effectively. The practices are also being used to guide the development of knowledge and resources proposed by ECPC II. The ECPC will also use the latest information and research in the science of learning to structure all our TA activities (cf. Carey, 2014; Lang, 2016; Nichols, 2017).

The pedagogy represented in the RFP is deep and wide. We propose three foci to structure our activities: Self efficacy of all involved in ECI and EC; Inclusive Programs and Practices; and Implementation Frameworks. These areas will be the implementation supports for all target populations of proposed ECPC II center. As such, we present literature to in each area.

Self Efficacy. There are discrepancies found in both research and practice between what a teacher should do to facilitate learning and what he/she is able to do (see previous section). Neither preservice nor inservice training is likely to be effective in changing practitioner practices unless there are concomitant changes in self-perceptions of one's ability to affect or influence desired outcomes (Bandura, 1986, 1997; Druckman & Bjork, 1994). Research in a number of fields now indicate that self-perceptions of both competence and confidence mediate the relationship between the provision of training and practitioners' use of newly acquired knowledge and skills (Abbitt & Klett, 2004; Colbeck, Cabrera, & Terenzini, 1999; Delfin & Roberts, 1980; Jarvis & Pell, 2004; Khamis, 1995). Surprisingly, little is known about the self-perceptions of the competence or confidence of early intervention or preschool special education practitioners (see Lamorey & Wilcox, 2005; Wesley & Buysse, 2004, for exceptions). This is unfortunate because it is now well known that belief systems, and especially beliefs about one's ability to affect change, are strong predictors of how knowledge and skills are used to improve performance (Delfin & Roberts, 1980; Doolittle, Dodds, & Placek, 1993; Fleet & Patterson, 2001). Self-competence and self-confidence are important because these beliefs motivate and regulate people's behavior both in everyday life and as part of their professional careers (see especially Bandura, 1997; Druckman & Bjork, 1994).

Self-efficacy refers to the belief that one has the capabilities to organize and execute courses of action to manage prospective life events or situations (Bandura, 1997; Zimmerman, 2000).). Mastery experiences, or instances of successful execution of a skill or behavior, strengthen the belief that one's own actions result in a positive outcome (*self-efficacy*), thereby reinforcing and ultimately increasing the frequency of that behavior. These beliefs influence the time and effort a person devotes to executing courses of action and a sense of mastery or control over life events or situations (Pajares, 1997). As noted by Zimmerman (2000), self-efficacy beliefs are predictive of two measures of the effort devoted to executing a given task: performance (competence) and energy (confidence), both of which are considered different

dimensions of the efficacy construct. According to Stephenson (1992), "capable people have confidence in their ability to (1) take effective and appropriate action, (2) explain what they are about, (3) live and work effectively with others, and (4) continue to learn from their experiences, both as individuals and in association with others" (p. 2).

Teacher self-efficacy beliefs have been found to influence the adoption and use of different types of educational practices (e.g., Rimm-Kaufman & Sawyer, 2004; Sugawara, Ruder, & Burt, 1998). One of the experiences that influences teacher belief appraisals is preservice teacher preparation (Ingvarson, Meiers, & Beavis, 2005; Lu, 2005; Tschannen-Moran & Hoy, 2007). Feelings of teacher preparedness refer to a teacher's sense of how well one believes he or she was prepared to teach in his or her major field (Lu, 2005). According to Lewis et al. (1999), "feeling *very well prepared* is one possible indicator of a high-quality teacher" (p. 47) and the belief that one has acquired the knowledge and skills to be able to teach effectively. In their report and analysis of the beliefs and practices of more than 3500 teachers, however, Lewis et al. (1999) found for most teacher-related practices, only 20% to 40% of the teachers believed that they were very well prepared. This finding has been replicated in the ECI field (Bruder et al., 2013), and, has implications for teacher preparation and continuing education models and the use of standards and practices to guide the such models **The ECPC II will focus on providing implementation supports to administrators, IHE faculty and other PD providers to enhance their ability to provide effective training on RP using adult learning strategies, to then influence a service providers confidence and competence to implement RP practices that result in positive outcomes and reinforce their sense of mastery. We will also use participatory strategies with all Center participants to enable them to assist in identifying, testing and using ECPC II TA resources and activities that meet their individualized needs, no matter what their role in ECI or EC.**

Inclusionary Practices and Placements for All Young Children. The inclusion of children with a range of disabilities in educational settings has been a practice in the United States since the 1960's (Bruder, 1997, 2000b; Guralnick, 1978, 2005b). The first government funding used to support this practice was through the Handicapped Children's Early Education Act of 1968 (HCEEP) (P.L. 90-538) which provided discretionary grants to develop model intervention programs for infants and young children with disabilities and their families. Inclusion has been supported by federal legislation (IDEA) for infants and young children who receive ECI as a requirement of their individual learning plans. Yet, ECI and EC state administrators still struggle with the implementation of inclusive early child hood systems. Among the reasons cited for this lack of progress is the inability of existing EC programs to seamlessly incorporate special education and related services into their educational curricula and routines, and challenges reconciling the differing philosophies of special and general EC educators (see U.S. Department of Health and Human Services, 2015).

In 2001, an anthology was published by Guralnick (2001a) summarizing the remarkable history of ECI inclusion through chapters contributed by legal experts, educators, researchers,

child development specialists, and program developers. The book addressed research accomplishments, as well as program infrastructure and policy initiatives relevant to inclusive opportunities for infants and young children with disabilities. Most importantly, Guralnick (Guralnick, 2001b) provided a framework to further enhance early childhood inclusion through the operationalization of four key goals of EC inclusion: access, accommodation, developmental progress, and social integration.

An update in these areas was recently completed by Guralnick and Bruder (2016). Access to inclusive programs and classrooms remain the most challenging of the four goals to achieve. While it has been suggested that attitudes of teacher may be one barrier that impacts access to inclusive EC settings for children (Barton & Smith, 2015), Guralnick and Bruder (2016) observe that attitudinal barriers are driven by multiple stakeholders such as policy makers, EC program staff and families who question the ability and capacity of the EC system to address the specialized and perceived burdensome needs of children with disabilities.

To address this reluctance to include children with specialized needs in EC programs, Bruder and Guralnick propose that state leaders examine their EC and ECI system, and merge the two (Bruder, 2010). This national vision has been put forth most recently in a policy statement by the federal government, (http://www2.ed.gov/policy/speced/guid/earlylearning/joint-statement-full-text.pdf) which also contains implementation recommendations for state and local EC programs. While this recommendation is not new (Bruder, 2000a), it is predicated on the adoption of a mental model and a common vision for all young children resulting in the merger of EC and ECI programs, across funding streams, eligibility criteria and outcome measures. Another recommendation from this review of inclusive programs was to focus on the common competencies that both ECI and EC teachers should demonstrate in areas such as philosophy, knowledge and skills to implement developmentally appropriate curriculum with adaptations, modifications and instructional practices for all children, some of whom may be identified as having disabilities. Lastly, they suggest administrative and implementation supports be provided to administrators, IHE faculty and PD providers to enable them to develop and implement inclusive programs with high quality and effective staff. **The ECPC II intends to support the adoption of such practices through the leadership institutes provided to state ECI and ECI administrators to provide them with administrative supports to institute inclusive policies, practices and personnel training and TA. We will also be examine the role and credentialing of the EC and ECSE teachers through our partnerships with DEC and NAEYC, and other related service providers organizations. As recently recommended by the National Research Council (Allen & Kelly, 2015b), we will be differentiating teacher roles and responsibilities through a model proposed in ECPC I as appears on Figure 12 (Bruder, 2016).**

Implementation Frameworks. Implementation Science has been defined as a specified set of activities designed to put into practice an activity or program of known dimensions (D.L. Fixsen, S.F. Naoom, K.A. Blase, R.M. Friedman, & F. Wallace, 2005, p. 5). Inherent in the

process is the identification of operationalized and effective groups of practices which in totality meet a service need. Implementation processes must be purposeful and documented in sufficient detail to promote scaling up or program replication. Effective examples of this process (Sugai, Horner, Algozzine, et al., 2010) use an incremental process of system change that differentiates the role of program implementers into teams based on function. For example, a management team develops the vision for change and provides the infrastructure, and transformational teams supervise the system change through regional and local resource teams.

One of the original frameworks proposed to accomplish the implementation of effective practices across users and sites consisted of a three-level framework to scale up the use of intervention research findings to improve the use of effective service delivery models (see also Paine & Bellamy, 1982; Paine, Bellamy, & Wilcox, 1984). Explicit performance criteria are delineated at each level of implementation to insure the reliability of evidence across sites, populations in need of the service, and individuals implementing the services. The success of this process is attributed to the adherence to operational definitions, measurable outcomes, and well-documented interventions that could be replicated with fidelity.

Once a model is established, scaling up and sustainability is the goal (see Dunst, Trivette, Masiello, & McInerney, 2006; D.L. Fixsen et al., 2005; Sugai, Horner, Algozzine, et al., 2010). Sustainability is dependent on a detailed process which begins with identifying the valued outcome, then identifying and modifying practices and finally implementing the practices, all the while performing progress monitoring, data based decision making and building capacity (McIntosh, Filter, Bennett, Ryan, & Sugai, 2010). **Since one requirement of implementation science is to articulate the service delivery model of interest, a CSPD that is comprised of discrete components comprised of practices, which in totality encompass the tasks of preparing, recruiting, retaining, retooling and regenerating an ECI workforce is a fit for this process.** In particular, a CSPD can be customized to variabilities in the workforce, not the least of which are state systems of early childhood and the standards used to assure quality and effectiveness of the workforce.

The process of scaling up EBP into effective service delivery models has been refined and improved through applications of implementation science (IS) (Halle, Metz, & Martinez-Beck, 2013). Scaling up has been defined as the process by which interventions are implemented on a small scale, validated and then implemented more broadly in real world conditions (Odom, 2009) while IS has been defined as a specified set of activities designed to put into practice an activity or program of known dimensions. Inherent in the process is the identification of operationalized and effective groups of practices, which in totality meet a service need (e.g., CSPD subcomponents). Implementation science must be purposeful and documented in sufficient detail to promote scaling up or program replication. Effective examples of this process use an incremental process of system change that differentiates the role of program implementers into teams based on function (cf. Sugai, Horner, Fixsen, & Blase, 2010).

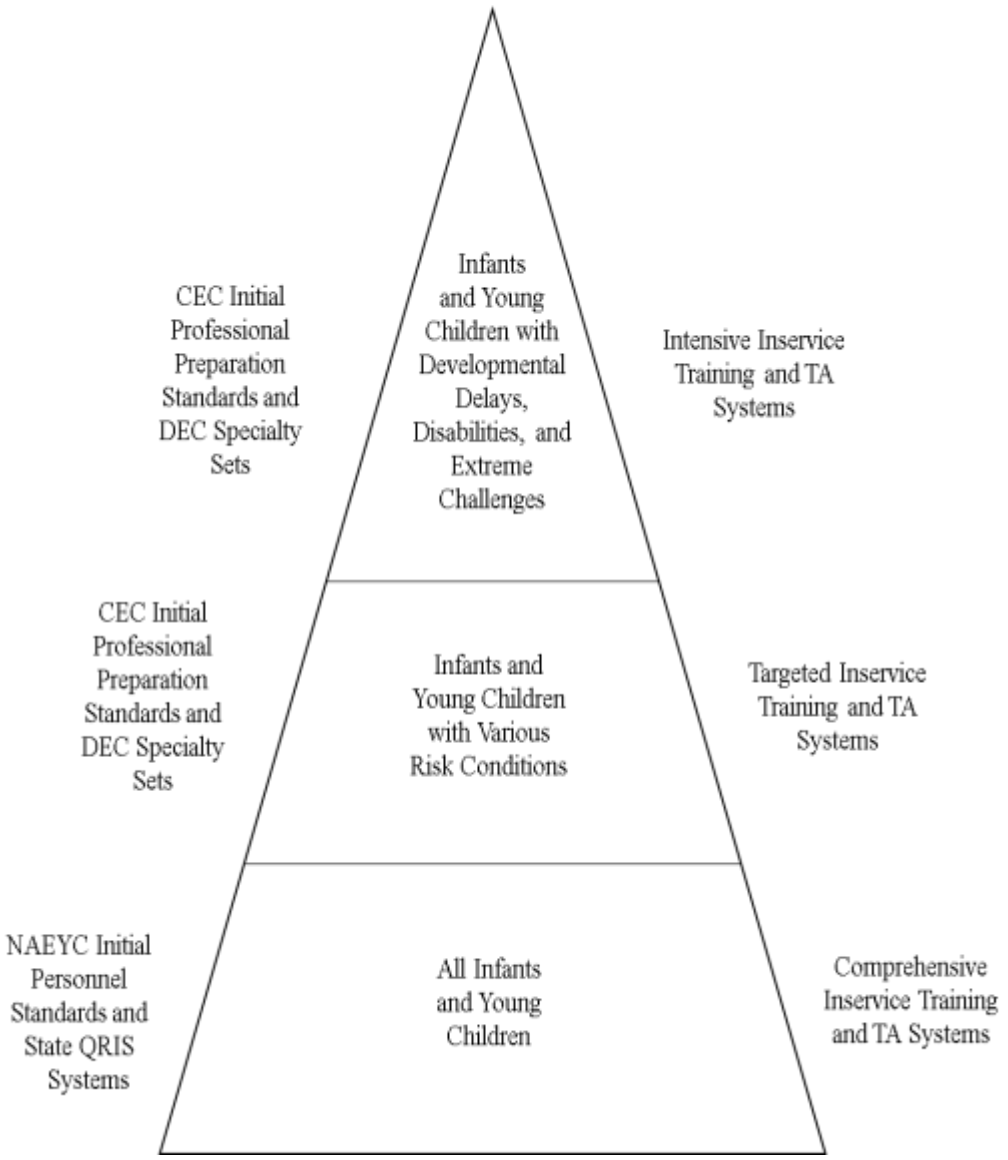


Figure 12. A Hierarchy of Knowledge and Skills for ECI and EC teachers

The State Implementation and Scaling Up of Evidenced Based Practices Center (SISEP) articulated a precise process to operationalize the steps and components of scaling up (D.L. Fixsen et al., 2005). Successful scaling up typically involved both horizontal and vertical activities Vertical scaling-up, or the depth of going-to scale, referred to changes that have effected at all levels of a system (e.g., state level, program level, and person level) contributing to the adoption and sustained use of targeted practices. Horizontal scaling-up, or the *breadth* of going-to-scale, referred to the spread in the use of targeted practices by end users that has typically accomplished by replications of replications, which have the effect of recreating the adoption and sustained use of targeted practices (Simmons & Shiffman, 2006). Critical to both levels of

activities were criteria for defining the program to be scaled up. Fixsen et al. (2013) later defined four such criteria to frame this process: 1) clear description of the program; 2) clear description of the essential functions; 3) operational definitions of the essential functions; 4) a practical assessment of the performance of practitioners who are using the program. Each criteria contain additional descriptors to further define this framework. Halle et al. (Halle et al., 2013) further adapted and illustrated this framework in EC by adding a fifth dimension to an implementation framework: evidence that the program is effective when used as intended.

Recently, there has been a growing interest and multiple examples of the process and strategies used to implement a systemic improvement through implementation science (Cook & Odom, 2013; Halle et al., 2013; Klingner, Boardman, & McMaster, 2013; Odom, Cox, Brock, & the National Professional Development Center on Autism Spectrum Disorders, 2013). Metz and colleagues (Metz, Naoom, Halle, & Bartley, 2015) proposed an integrated stage-based implementation science framework for specific EC programs and systems. This framework is comprised of four distinct stages and three core implementation elements within each of these stages. She emphasizes that this framework is focused on implementation and systems change which can be expected to take 2 to 4 years. The four stages begin with exploration followed by installation, followed by initial implementation, and finally full implementation of the full program or system. The three core elements embedded within each of the four stages are implementation teams, data-based decision making for progress monitoring and improvement, and sustainable infrastructure for capacity building. She stated that the implementation teams should have core competencies across a number of areas which includes the innovation or approach, the infrastructure, these cycles of implementation, and general knowledge and application of systems change. She illustrates this implementation process through the development of a professional development program process in North Carolina.

The ECPC II proposes to use a 4 step process that was validated in ECPC I to develop and scale up EC CSPDs in states. (See Figure 15). Over the past 4.75 years we have established in implementation frame that has operationalized the 6 sub-components of a CSPD, and provided guidance to states on various features of the CSPD (e.g., Personnel Standards). We have demonstrated the use of implementation drivers in program management (training, coaching, performance feedback, data-based decision-making) for State ECI administrators and we have implemented a four stage implementation frame (exploration, installation, initial implementation, full implementation) in the 12 states in which we are providing intensive TA. We will continue to refine the CSPD through the expansion both the breadth and depth of CSPD activities of sub components across EC sectors and down to local programs. This is outlined in the TA and strategic planning handbook (ECPC TA.ORG).

(iv) The proposed products and services are of sufficient quality, intensity, and duration to lead to the outcomes to be achieved by the proposed project

The goals proposed for this center are sequential as the knowledge obtained in Goal 1 will inform Goal 2, and the development of resources, materials and tools will be used to implement TA in Goal 3. Goal 4 provides the infrastructure to TA through collaborations across the EC and disability fields, and Goal 5 addresses center management across directors, staff, contractors, consultants, partner organization, with a thorough evaluation plan. We will address all 6 sub-components of a CSPD across all goals and objectives of the Center. Figure 13 illustrates this relationship among Center Goals, CSPD sub components and target TA recipients.

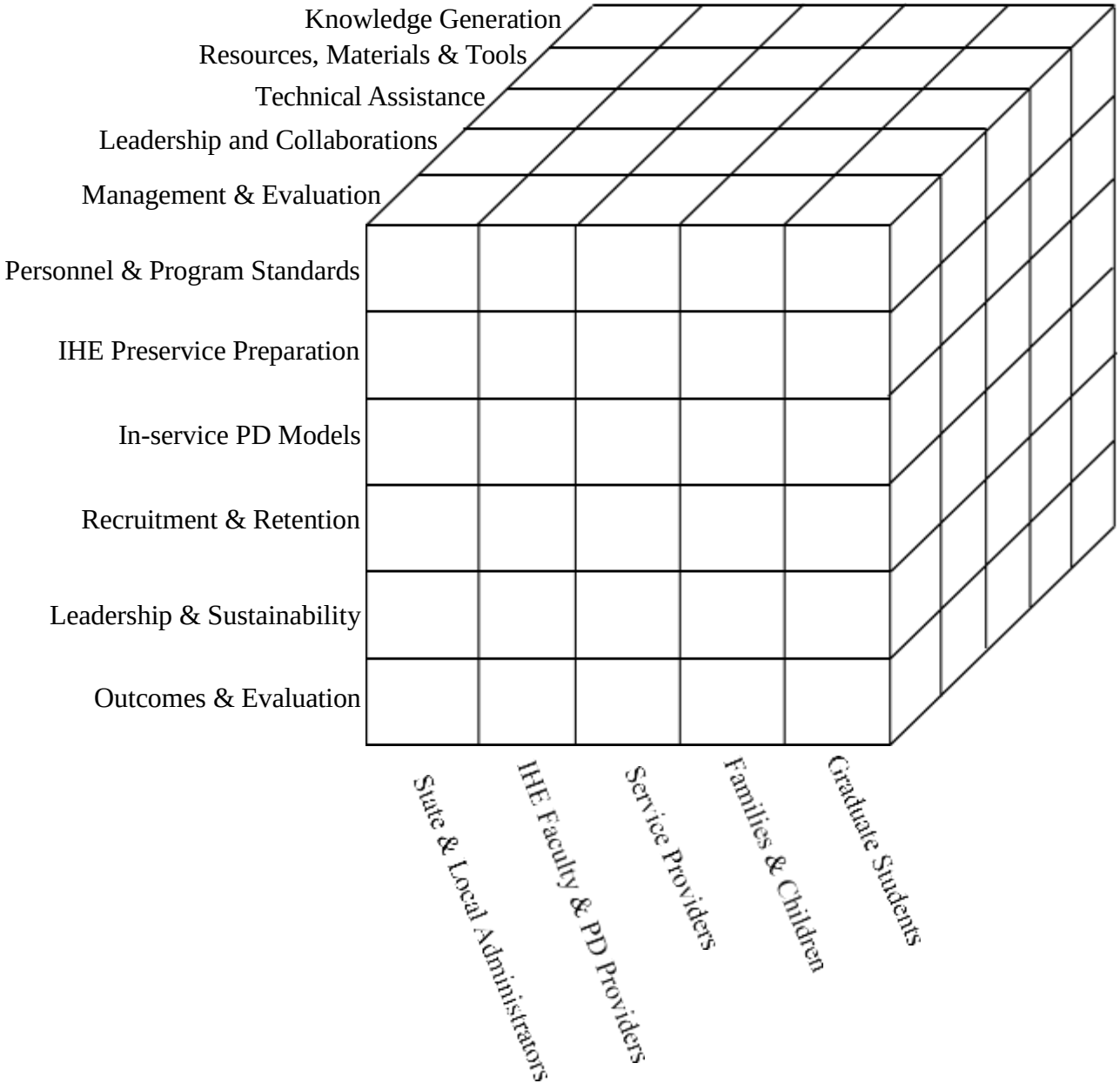


Figure 13. Relationship among Center Goals, CSPD sub Components and Stakeholders

We will also ensure that the ECPC II will collect and use data for progress monitoring of all activities and revise them as needed. Each objective in the development process for ECPC TA products and materials will relate to another and the development and use of each will inform the implementation of another. Figure 14 illustrates this relationship among our TA goals and objectives. Following Figure 14 is the description of the goals.

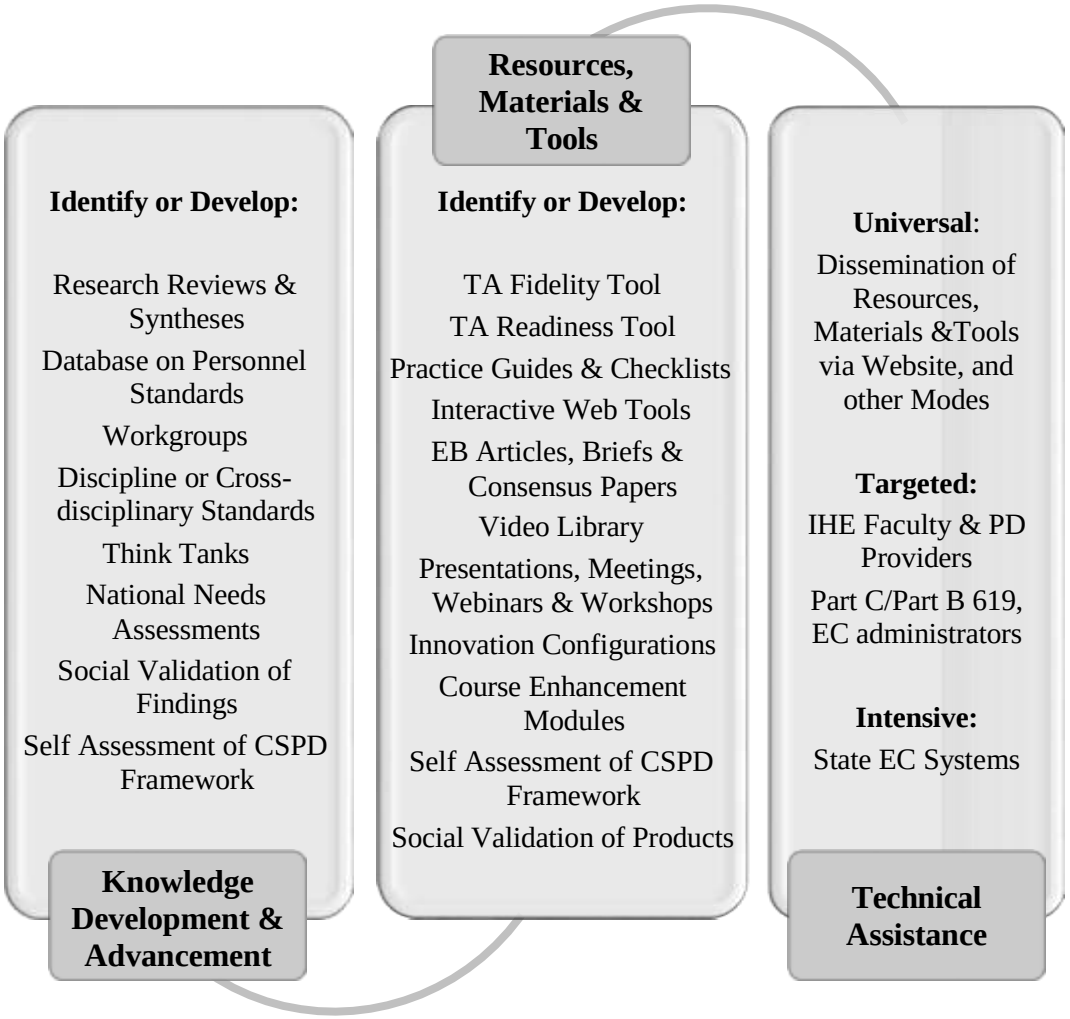


Figure 14. Relationship among Phases of TA Development.

In addition to our detailed workscope in Attachment A, we develop detailed work plans for each of the objectives and activities, to be monitored quarterly through our internal evaluation plan. A sample of such a draft work plan representing 3 sub activities of an activity we propose to accomplish with DEC on standards and RP is attached to the work scope in

Attachment A. All of our objectives are extensions our work over the past years. Following are descriptions of the objectives to under each goal.

Goal 1. Identify and build the knowledge base for developing and implementing EC CSPDs that will improve outcomes for young children with disabilities and their families.

Our objectives under this goal emanate from the work we completed and accomplished in ECPC I. The foundation of knowledge generated evidence-informed early childhood intervention practices are findings from practice-based research synthesis (Dunst, 2016) and realist research reviews (Pawson et al., 2005), both of which focus on identifying the key characteristics or active ingredients of a practice that are related to outcomes of interest and the condition sunder which the characteristics and active ingredients have optimal positive consequences. This process focuses on unpacking (Dunst & Trivette, 2009) and unbundling (Lipsey,1993) an intervention to inform the development of EB products and materials.

During ECPC I we completed 5 research synthesis and 1 metasynthesis of practices critical the field of ECI and EC personnel development. The meta synthesis is on adult learning practice and it is on the ECPCTA.ORG website. The findings from this are being used to guide all TA activities. As an illustration about methodology used to develop a synthesis, an overview about the current synthesis we are completing follows. This method is explained in Dunst (2016), and is being used to guide the research syntheses that for the DEC RP.

The leadership synthesis was initiated to identify which types of leadership characteristics and practices are associated with different team, employee, and staff outcomes. The synthesis focused on shared leadership (Avolio et al 2009) and its variants (authentic, distributed and transformation leadership) because (a) these types of leadership include explicit efforts to meaningfully involve individuals in shared decisions and actions, and (b) a scoping review of the leadership literature indicated that the studies included quantitative evidence for the relationships between leadership characteristics and practices and outcomes of interests (e.g., Stewart, 2006, Kirby et al 1992).

The literature search involved both the review of studies in previously published research synthesis and meta-analyses (e.g., Gardenes et al 2011; tian et al, 2016; Nichlaides et al 2014) and controlled vocabulary, key word and natural language searches of multiple electronic data based and leadership journals. Just over 700 studies were located, approximately 500 of which included leadership outcome data. Examination of the 500+ studies found that about 100 included multiple measures of shared leadership characteristics and practices and other studies employed global measures of leadership which would not permit us to unpack and unbundle which characteristic's and practices under which conditions were related to the study outcomes.

The 100+ studies that constitute the final sample of leadership investigations being meta-analyzed included different leadership characteristics and practices (e.g., relational transparency, inspirational motivation, transitional participation, distributed supervision) and more than 1000 different outcomes (e.g., staff commitment, job satisfaction, staff trust in leadership, individual and team performance). Both the leadership and outcome measures (as well as moderator

variables) have been entered into a data base as reported by the study investigators. All of the variables and measures are in the process of being systematically examined to combine characteristics and practices and to combine different outcome measures also measuring the same or similar dependent variables. These aggregated variables will be used to perform the meta-analysis of the leadership outcome relationships in all of the studies that are in our data base. Preliminary analyses indicate that the largest number of leadership measures are related to most study outcomes but then are differential relationships between the various leadership characteristics and practices and different study outcomes.

The first synthesis we will complete under ECPC II will be an expanded meta syntheses on the provision of evidenced based TA. There is a noticeable absence of widely recognized standards for high-quality TA (Katz, 2015, p. 60). This synthesis will facilitate the development of TA standards for the field of ECI, EC and Special Education for both funders of such services and the recipients of such services. Standards will also assist TA providers and organizations as they develop products and services to improve systems, programs and practices. At present, TA is conducted differently by different personnel, different agencies, and with different clientele, none of which includes an operational definition of technical assistance (Blasé, 2009, p. 1). **Other synthesis will be conducted on characteristics of the CSPD subcomponents and practices as informed by our surveys of stakeholders, think tanks, work groups and affinity group members.** We will prioritize systematic research reviews and syntheses in areas in which integrated knowledge is lacking.

We will be using a number of additional methodologies to ensure the efficient and valid identification and generation of knowledge. All knowledge objectives will use participatory strategies including co-planning and co-creation through think tanks, survey development, distribution and analysis, environmental scans (e.g., to update the personnel data base), and focus groups to generate and validate the information gathered through syntheses, survey results and expert consultants. Rather than one survey, we envision multiple surveys conducted across stakeholders based on need and context. We intend to use our vast array of partner organizations to identify a representative for the center affinity group. We will also expand our cross disciplinary work groups of professional organizations who have been working on personnel standards to include those cross sector organizations that have a vested interest in personnel preparation and ongoing support of early childhood personnel. This group will continue to generate knowledge about personnel standards and RP. Another outcome of this goal will be a revision of the Personnel Framework and self assessment using data we have collected from the states receiving TA in collaboration with ECSTAC. We will solicit broad input from members of workgroups and organizations who also have personnel frameworks (e.g., NHSA, NAEYC). The information identified or developed will be used to inform and guide the TA products and services, in particular in the identification of implementation supports to both C and 619 coordinators and IHE faculty in the areas of scaling up effective personnel training practices through the use of adult learning methods and strategies (Dunst, Bruder, & Hamby, 2015).

Goal 2. Develop materials, resources, and tools to support early childhood personnel to deliver high-quality services and inclusive programs to improve outcomes for young children with disabilities and their families.

The evidence-based key characteristics and active ingredients of implementation and intervention practices identified under Goal 1 will in-turn be used to develop evidence-informed checklists (e.g., Dunst, 2017), practices (e.g., Pindiprolu, 2012), guidelines (e.g., Ontorio, 1996), vignettes (e.g., Dunst et al., 2015), video examples (Dunst, 2017), and other products to increase the likelihood that the evidence-based features of a practice are used with fidelity (e.g., Halle, 1998) as have intended outcomes and benefits (e.g., Dunst & Bruder, 2002). This translation process will be used in ECPC II to develop both PD materials and products and early childhood intervention products that will be the focus of professional development. All knowledge generation objectives will have a corresponding resource, material or tool identified or developed. For example, we will be using the synthesis on effective TA characteristics and the environmental scan to develop a tool to measure indicators of effective TA.

Another example are performance checklists which will be developed to translate the knowledge gained in the Goal 1 into practice guides to facilitate the Part C and 619 administrators ability to support a work force. A *performance checklist* refers to a list of indicators that are used to determine the extent to which an implementation or intervention agent's performance mirrors the characteristics of a practice that has evidence-based key features and elements (Dunst, 2017). Practice guides will also be prepared in different formats depending on the topic area and specific practices within each area. The practice guides include: (1) a description of the purpose and importance of a particular type of practice (e.g., adult-child social games), (2) 5 or 6 ideas, examples, and suggestions for how to implement the practice, (3) a vignette of a practitioner or parent using the practice, (4) short video clips of parents or practitioners using the practice, (5) outcome indicators for determining if the practice had expected child benefits, and (6) an external link to additional resources for similar types of practices. The practice guides will be field tested with members of the affinity group and work group, and feedback used to make final changes before they are made available as part dissemination and the different types of technical assistance. In addition, measures of social validity will administer for all products to assess two dimensions of social validity: social importance and practice acceptability.

Our resources, materials and tools identification or development process will consist of the development and/or identification of existing resources, materials and tools, and validation of these products by our associate directors, knowledge content consultant, and stakeholders. These resources will illustrate the evidence base in cognitive science and learning as identified through the literature and our stakeholders rating of the utility and effectiveness of resources. For example, we will be using consultants under this goal to provide input on evidence-based practices that will inform our targeted and intensive TA activities with state administrators and IHE faculty and other stakeholders who contribute to a CSPD. We will be using our expert consultants to provide information on supports such as coaching and other implementers identified through think tanks, focus groups, surveys and syntheses. We will be utilizing our

partner organizations to assist in the activities in this goal by identifying the resources, materials and tools to use with Part C, 619 and early childhood state administrators and IHE faculty.

A unique aspect of our product development activities will be the translation of Center findings, lessons learned, reports, activities, etc., into audience-specific, tailored and targeted materials to make Center findings applicable and useful to those audiences. This is an alternative to the one-size-fits-all approach to how materials are generally developed. These type of materials and their messages speak directly to *a priori* defined group of recipients where the message communicates "this was developed especially for me" (see for e.g., C. J. Dunst, Trivette, & Hill, 2011). Research indicates that tailored and targeted materials and messages are more effective in terms of changing policy, practice, and behavior (Dunst, 2016).

There is general agreement that web-based and print material prepared in nontechnical formats should be short, user-friendly, and highlight the main point of the message. Dunst and his staff have successfully used this approach to material development and message tailoring where parents and practitioners consistently judge the materials as highly usable and acceptable (see Puckett.org) . In addition, we will be using technology to disseminate information via Youtube, podcasts, webinars, and computer and smart phone apps (see for example, http://www.uconnucedd.org/videos_multimedia/index.html). Many of the tools we will develop utilize the web and be interactive teaching tools or guides for the implementation of practices associated with effective implementation of quality EC services in inclusive environments.

Digital video will also be utilized as a tool to support both pre-service, in-service, and on-the-job professional development activities We do not think on line course development is required as we will be able to identify existing course work that has evidence behind it effectiveness for the building of skills in the workforce, IHE faculty and other PD providers. We will, however, be using different types of technology to develop course enhancement modules (for existing courses) and a video library to illustrate EBP and the DEC recommended practices (RP). Video exemplars of EC practices will be identified from multiple sources and stakeholders, and a repository of video illustrations will be housed by the ECPC II and DEC to enable faculty and IHE faculty and PD providers to illustrate EB practices to students TA recipients These TA activities include: illustrating and disseminating practices; providing tutorials and orientation materials; illustrating EB coaching; conducting learner and program evaluation; and collecting, analyzing, and reporting data. In particular, digital video is perhaps the most effective strategy available to us for providing rich, clear illustrations of exemplary practices and models. (see Results Matter website for exemplars been designed by Larry Edelman and Puckett institute https://www.youtube.com/watch?v=gAiF-bqw42o for a sample instructional video

We will be using the principles of micro learning to identify and develop new video (if necessary). Micro learning has been used most effectively by the Khan Academy; which is now the official site for SAT preparation, suggesting the new generation of learners will be skilled at this increasingly effective method of learning. (see http://www.elearninglearning.com/edition/weekly-ppt-micro-learning-2017-02-18?open-article-id=6245807&article-title=microlearning--what-it-is-and-what-it-isn-t&blog-

domain=bottomlineperformance.com&blog-title=bottom-line-performance), The idea for microlearning comes from research on how young adults and millennials learn and retain information, but is beneficial for all ages. With decreasing attention spans, limited short term memory capacity, and the need to always be learning to keep current, traditional ways of "one and done" training sessions are not cost effective, nor are they a wise use of time. Microlearning is a promising learning technique designed to provide new learning in 3 to 5 minute"bite-sized chunks." It is projected that microlearning will increase in use going forward, but it is imperative to use it appropriately. For example, microlearning would not be ideal to use in situations where discussion or performance support is needed, and it would not turn an employee into an expert. Microlearning is best for situations where reinforcement is needed, where content must be spaced out across time, and when quick and easy access is necessary. Microlearning is flexible and can be designed in different ways allowing (Cole, 2017; Hilton, 2015).

Lastly, we will be developing course enhancement modules and course innovations with assistance from staff from the CEEDAR TA center, also funded by OSEP to enhance personnel competence for those service students age 5-21 (see https://ceedar.education.ufl.edu). CEEDAR staff will assist ECPC staff to use effective materials to assist EC IHE faculty and PD providers.

Goal 3. Provide universal, targeted and specialized technical assistance services to support state IDEA Part C and Section 619 administrators and programs (including PD staff and programs), IHE faculty and programs, and other types of early childhood service programs and personnel to deliver high-quality services in inclusive programs to improve outcomes for young children with disabilities and their families.

All technical assistance activities are focused on developing a CSPD through activities using adult learning strategies and cognitive research. A multi-tiered model of TA as required in the RFP and operationalized through the PBIS center and ECPC I will be used to provide TA: to the large universe of stakeholders in EC personnel development; to a smaller targeted group of recipients (IHE faculty, PD providers, and ECI and ECI recipients); and the smallest number of state wide systems of ECI and EC.

We will provide universal TA services through the development of a fully accessible and informative website modeled after the PBIS website, stakeholders will be able to access materials to develop, enhance, and support an early childhood workforce. Our website will be linked with all our partner organizations and materials will be aligned across websites that focus on workforce development (e.g., CEEDAR, ECTA). Target audiences for dissemination of center information, products, and research findings will include the key stakeholders that influence and participate in ECI personnel development. Each group includes a range of individuals with different interests and needs. It will be one of the primary challenges of the center to format and package information so that it is useful to the different constituencies that the center will serve. Paying attention to both the format and content of information dissemination, as well as obtaining feedback on the usefulness of products, will optimize the potential that the information will be useful and have an impact on practices (Cook et al, 2013).

We will provide universal services through the development of a fully accessible and informative website modeled after the PBIS website where stakeholders will be able to access materials to develop, enhance, and support an early childhood workforce. Our website will be linked with all our partner organizations and materials will be aligned across websites that focus on workforce development (e.g., CEEDAR, ECTA). We will also distribute resources, materials and tools on personnel development through interactive applications for the web or smart phones.

Targeted TA. All targeted and intensive TA will be coordinated with the other OSEP funded TA centers (see letters of support). All TA will be implemented after a needs assessment process and TA plan is developed through Goal 1 and 2 in collaboration with the OSEP TA centers and state administrators (through surveys and focus groups). The TA centers meet monthly by phone and we will use these calls to establish joint policies and procedures, including a common frame for a needs assessment, and TA planning document and content for the leadership institutes for C and 619 administrators, and the yearlong community of practice on leadership ECPC II will initiated for new administrators
will be delivered through a model which we have validated in ECPC I as leadership institutes. Training is provided to teams and a one year follow-up is required during which the state teams receive TA individualized to their needs.

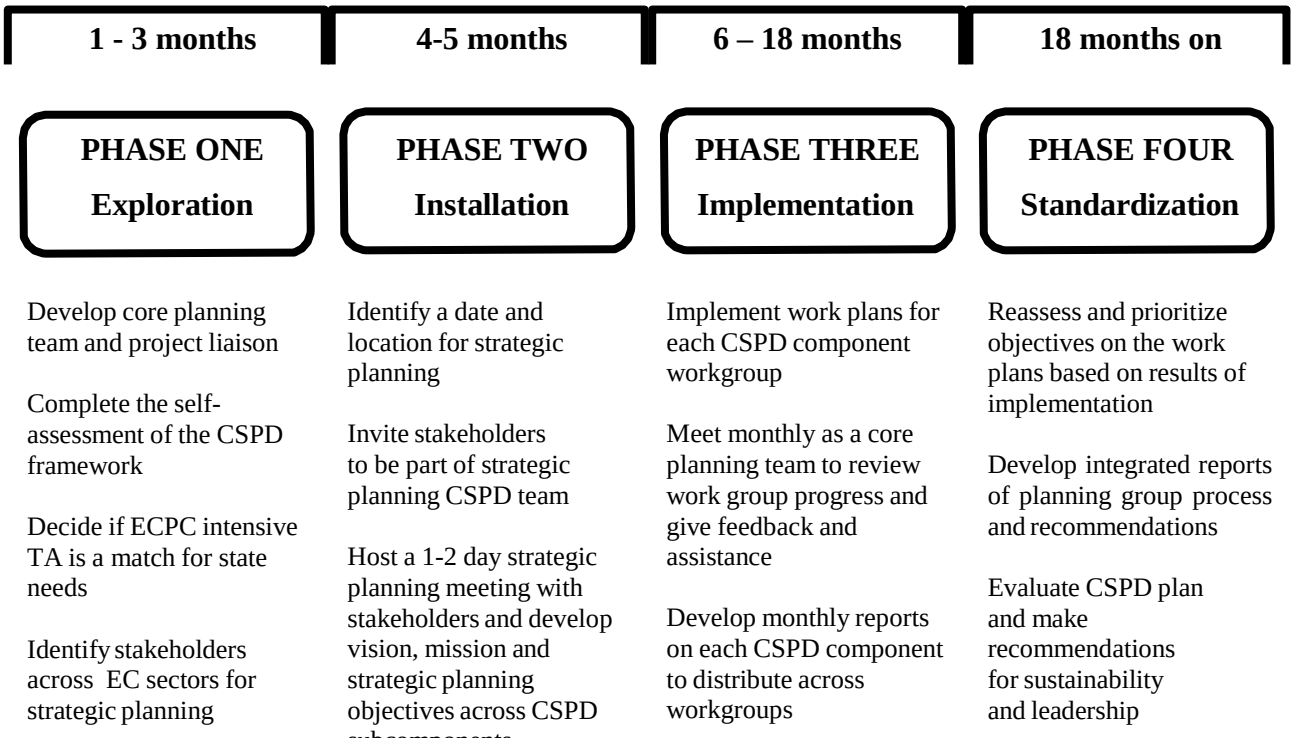
We will be bringing state teams of EC administrators (Part C, 619 and EC) together for a didactic leadership institute during which time they will receive instruction using adult learning practices and topical areas that we will refine through a needs assessment and research reviews or synthesis (developed with TA partners). The faculty are national experts and agendas from past institutes are on ECPCTA.ORG. The initial three-day institute consists of didactic lectures from faculty on the history of special education, early childhood, and early childhood special education. It also includes a didactic session on leadership and the research base behind leadership development (see ecpcta.org). Finally, sessions on collaboration and inclusion are presented in preparation for action planning. States are provided assistance to develop a strategic action plan with measureable outcomes to bring back to their state partners with a focus **on the development of integrated and inclusive state systems of EC**. Ongoing technical assistance is provided by ECPC staff via both individual and group meetings to assist states in implementing their action plan. The content of these institutes will change in response to our findings about supports needed by the c, 619 and EC administrators.

Targeted TA will also be provided to IHE faculty, in particular using enhanced course modules and innovative configurations (as used by CEEDAR) to provide content derived from the DEC RP and the personnel standards. Information on adult learning strategies will also be provided to IHE faculty where a rubric on adult learning developed by ECPC I will used to assist faculty in refining their teaching, either on line or in person.

Faculty will be brought together during 1 day preconference workshops at DEC, TED, and AUCD state and national conferences. We will have a meeting of all osep funded personnel projects at the directors conference, either live or via virtual meetings and webinarsDifferent tools will be provided to the faculty to adapt their courses of study to meet personnel standards

and DEC RP. TA will be provided using a didactic method with participatory strategies and adult learning practices modeled for use by faculty. Follow-up TA supports will be provided for 1 year through the web or on calls. We are also proposing to implement a yearly leadership institute with Doctoral or post doctoral students. Course content will be developed by attendees and faculty jointly based on needs and the three target areas for faculty as identified by this RFP. Follow up mentorship for a year will be provided by ECPC staff and consultants.

Intensive TA will follow a model that has been validated with 4 states and in process in 8 additional states (during ECPC I) using an implementation framework for providing EB TA **(**see Figure 15 below for an overview of the implementation phases**)**. This process results in a CSPD that meets all the indicators and elements currently delineated on the EC System Framework Self-Assessment for Personnel. The process begins with the identification of a leadership team that identifies a state team of multiple stakeholders who participated in a one day planning retreat. Using Senge's (1994) model of systems thinking and learning organizations, the retreat focuses on the development of a mental model and a shared vision for increasing the number of high quality personnel to serve infants and preschoolers with disabilities in different early childhood settings.



The strategic planning retreat uses a sequential process to develop a plan that beginning with values clarification and the development of a shared vision for the state CSPD. Next, a mission statement for the state planning groups is developed, which evolves into an action plan as measured by monthly increments for a period of 18 months. The action plan is implemented by small group taskforces focused on each of the quality indicators in the CSPD sub areas (see appendix A). The action planning includes objectives for all 6 areas of a CSPD areas. The ongoing action plan also includes additional stakeholders beyond the original planning team as the activities become far reaching and focus on every aspect of personnel development for multiple stakeholders, which is influenced and will influence federal, state and infrastructures of funding, policies, geography, culture and practices. ECPC staff, plus a liaison from the state team (paid by ECPC) meets with each sub component group monthly, to provide resources and personalized TA for the state team and the sub groups. This model is illustrated in case studies in Appendix D, which also contains procedural manual for the strategic planning process. Personnel who have been TA consultants in their own state and completed the strategic planning for a CSPD will be employed as consultants on the ECPC II to provide TA to new states as they plan their CSPD. Figure 16 illustrates the strategic planning process.

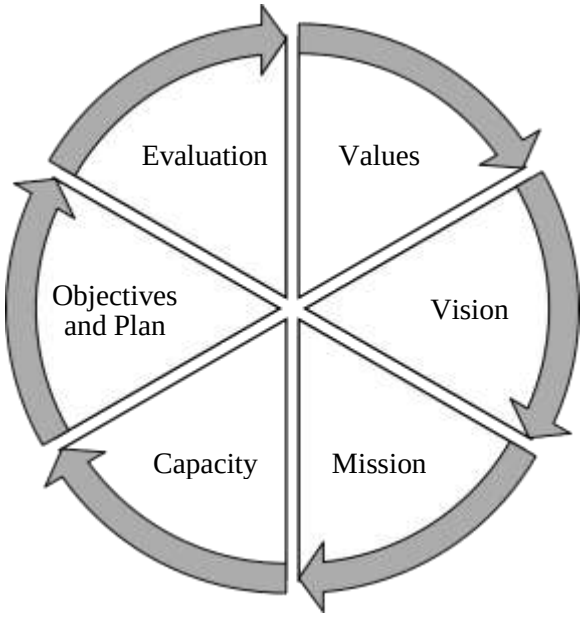


Figure 16. Strategic Planning Sequence

We are proposing to continue to provide TA to the original 12 states from ECPC I to continue work on leadership and sustainability, and to expand the breadth and depth of their CSPD. We will reconvene the strategic planning group in each state to revise their plans to reflect this expansion and use the same methodology as described. We will partner with other centers to insure the scope of a PD is expanded into local demonstrations (e.g., ECSTAC) on RP implementation. If both centers are funded, we will collaborate on system implementations and intervention practices in at least 6 of the states we had provided intensive TA and using the implementation strategies validated through ECSTAC over the past years. We will also use a

model developed by CEEDAR, and target three IHE institutions in each state to receive TA to align standards, embed DEC RP and use adult learning practices in their teaching.

We will also recruit 8 new states to provide intensive TA to build a CSPD. We have a number who have requested our intensive TA (see support letters).We will conduct a needs assessment with every interested applicant at the exploratory stage to assure goodness of fit along a number of dimensions such as readiness to make a commitment, state infrastructure, resources, culture for change and other TA priorities. We will use this needs assessment to model with the state how to assess their needs and identify resources. We will analyze the assessment and if appropriate, we will sign an MOU outlining the process and the state need and responsibility to the TA process. We will then begin the process with the identification of a leadership team. All other TA OSEP TA centers will participate in the needs assessment and the subsequent development of a joint TA plan (see support letters) through our monthly TA meetings. During those meetings, we currently discuss coordination and collaboration across activities and resources.

Goal 4. Collaborate with federal TA centers and all levels of the early intervention and early childhood system (e.g., regional TA providers, early intervention service programs and providers, LEAs, Head Start, child care, home visiting, State preschool, and families) to ensure that there is communication between each level and that there are systems in place to support the use of evidence-based practices.

The collaboration goal will ensure that ECPC II expands it activities horizontally through early childhood programs and systems. We have collaborated with a large number of organizations in order to ensure that our work is embedded across the many organizations that focus on the learning and development of young children (Appendix C). In particular, we will partner with DEC to jointly conduct a number of activities that including defining the role and competencies of the EI and ECSE, RP and capacity building with families and Doctoral students. All organization we are partnering with have been involved with ECPC I at both a dissemination level and an advisory level. This goal will allow us operationalize the involvement of multiple early childhood stakeholders by formalizing and quantifying their contributions in the development, implementation, and evaluation of knowledge, resources and TA activities. The broad-based scope of the organizations and agencies adds more credibility to the need for a CSPD as suggested by Bruder (2010) and Guralnick and Bruder (2016). Partnerships among TA centers have also been formed and the focus will be to develop joint tools to assess the readiness of TA, the development of a joint TA process, and to develop the content for leadership institutes for IDEA Part C and 619 administrators, and those who will provide TA to ECPC on course enhancement modules (CEEDAR.org and other early childhood TA centers across sectors, Zero to Three, NHSA, NAEYC, Child Care Aware). OSEP funded TA centers who work with the EC community will meet at least monthly as they have been doing over the past 4 years. An added bonus of these partnerships is the collaboration that will occur across non OSEP funded EC TA centers. For example our partnership with Zero to Three will allow us to align the activities and

resources of the ECPC II (if funded) with the activities and resources of the National Center for Early Childhood Development, Teaching, and Learning and the National Center for Early Head Start-Child Care Partnerships. Both are funded jointly by the HHS Office of Head Start and the Office of Child Care. This alignment will ensure that child with disabilities in multiple care settings will receive the highest quality of care and instruction.

Goal 5. Manage and evaluate all center activities to ensure that the center's intended outcomes will be achieved on time and within budget.

Our management and evaluation goal is articulated in the following section of this proposal. In particular, these objectives will ensure both the integrity of the center and the coordination of center resources including capital resources to leverage to impact constituents across the country. As a result the proposed budget of the Center is broad in its scope because we have contracted with a number of organizations and consultants to achieve Center goals and objectives as described above. We have done this purposefully to acknowledge the depth and breadth of partnerships that will be necessary to ensure the completion of center activities to ensure they result in improved statewide systems of personnel development which will include specific improvements in IHEs and Personnel Development so that there ultimately be created positive outcomes for children and families.

(v) Efficient strategies, technology, collaboration and non project resources.

The use of technology is embedded across all project activities, including management. Both the development of ECPC II products and professional development methods and procedure will take full advantage of advances in information technology (Price & Kirkwood, 2014) and the science of informatics (Berner, 2014) and the use of technology for improving professional development practices (Gess-Newsome, Blocher, Clark, Menasco, & Willis, 2003) with a focus on ensuring both professional development (Bain & Swan, 2011; Long et al., 2016) and intervention practices (Sim, Sanders, & McDonald, 2002) are evidence-based.

Informatic sciences focuses on the need to create new solutions using a wide range of technology applications. Information technology is concerned with which types of devices are the best "meant-to-an-end" in terms of improving learner knowledge and skills. There are currently available a wide range of technology options for improving both preservice and inservice professional development (Bain & Swan, 2011; Gess-Newsome et al., 2003; Long et al., 2016; Price & Kirkwood, 2014). ECPC II will use lessons learned from both informatics and information technology in education and other fields to inform the use of technology to ensure Center activities, materials, products, etc. are not only used in both preservice and inservice professional development but that they are routinely used to improve lesser outcomes.

ECPC II will place special emphasis on the use of technology for informing the provision of professional development and improving the knowledge and skill base of the early childhood intervention work force. This will include, but not be limited to, evidence-based technology infused professional development (Gess-Newsome et al., 2003; Price & Kirkwood, 2014) and the use of existing tools and strategies (Bain & Swan, 2011; Long et al., 2016). Long et al. (Long et

al., 2016), for example, developed and validated an evidence-based procedures for ensuring the use of computer-based, smartphone, and iPad technologies resulted in learner identification of the best evidence suitable for improving practitioner knowledge and skills. Hew and Cheung identified nine Web 2.0 technologies being used in preservice professional development to improve student understanding and use of evidence-based practices. Similar applications will be used in ECPC II to improve inservice professional development as well (e.g., Cook et al., 2013; Katz, 2015; Knoche, Kuhn, & Eum, 2013).

The center will be using non project resources in the form of human capital from participating organizations and consultants. These collaborations will result in many opportunities for economies of scale across center activities. In addition, a number of our sub contractors and our consultants are either donating their services or substantially lowering their hourly or daily rate to enable this proposed center to use its resources on the vast scope of objectives and personnel. This is documented in letters of support and the budget. The UConn is funding over half the cost of the proposed director's salary and other key personnel

C. Quality of Center Evaluation

This section describes the plan for formative evaluation of ECPC II's activities and summative evaluation of ECPC II's intended outcomes. The evaluation plan stems directly from the Logic Model (see Figure 17) and relies on objective measures of progress in implementing the center and ensuring quality of ECPC II's services. The proposed evaluation approach ensures that center activities are completed in a timely manner, and ECPC II's goals and objectives are achieved with a high standard of quality. Performance measures will inform evaluation questions and guide data collection activities that in turn will produce quantitative and qualitative data to: (1) provide formative performance feedback of center progress toward achieving intended outcomes; (2) assist center management in assessing program quality assurance; and (3) provide summative evaluation as to the overall value, worth, efficiency, and effectiveness of the center.

Evaluation is an essential and integral component of ECPC II's operations, and ECPC II staff are committed to improving practice, increasing the quality and quantity of available evaluation data, and using evaluation findings to guide decisions. ECPC II's evaluation serves two purposes: (1) to inform the ECPC II management team about what it does well and what needs to improve; and (2) to measure the effort, effect, and outcomes of the work. Aligned with the Logic Model, the Evaluation Plan (Appendix A: ECPC II Evaluation Plan) sets performance targets for each objective against which center outputs, outcomes, and impact will be measured.

Upon funding, the center will contract with Evergreen Evaluation & Consulting, Inc. (EEC) to conduct the external evaluation. EEC senior evaluators and associates have extensive experience in developing evaluation strategies and methodologies designed to provide formative and summative feedback to center management and stakeholders. EEC is currently the external evaluator for ECPC and has conducted numerous evaluations of OSEP-funded centers (e.g., several SPDGs, CIID, DaSy, ECTA, ECPC, NCEO, CTD, CPIR, RRCPs, IHE Personnel Prep). EEC is familiar with the GPRA performance measurement system and is able to assist clients competently with reporting requirements. EEC uses a collaborative approach to program evaluation and conducts all activities in close coordination with the client. EEC has a reputation for developing and implementing timely, flexible, and culturally responsive evaluation plans.

Evaluation Oversight. EEC will work with ECPC II's internal evaluation team, which will consist of the internal evaluator, the UCEDD's research and evaluation director, the center coordinator, and the Associate Directors. This group will be responsible for all aspects of the formative evaluation for the center. This includes the centers' progress towards each center activity, the dissemination of the center's products and services, and assessment of TA.

The internal evaluation team and EEC, will review and revise the Logic Model and Evaluation Plan, as needed. Once those are finalized, all tools will be shared with ECPC II staff to explain their purpose and use and the timeline for planned evaluation activities, and to review their role in providing feedback to the program.

Early Childhood Personnel Center (ECPC)
Logic Model

Inputs

Program Investments

UConn Health

UConn Neag School of Education

Director, Co-Directors and Assoc. Directors

External Evaluators

Sub Recipient Partners

Consultants:
- Cross disciplinary
- Expert-Technical
- IHE & Personnel Standards
- Leadership Faculty
- State TA

Partner EC organizations

Partner TA Centers (CEEDAR, CEELO, DASY, ECSTA, IDC NCSI, PBIS, SWIFT, Zero to Three)

Outputs

Key Activities & Outputs

Knowledge Development:
- Identify, develop, synthesize *EB practices* to:
  - support a competent EC workforce;
  - contribute to the building & implementation of an effective CSPD
- Identify & develop *resources, materials, tools* to:
  - increase awareness & recognition of various personnel standards & competencies
  - support EC personnel faculty to align programs of study to EC personnel standards, integrate DEC recommended practices into the curricula, utilize adult learning principles & use implementation supports.
- Identify revisions for the *self -assessment* of CSPD personnel component of the EC Systems Framework.
- Expand & update the state and national *data base on personnel standards*

Technical Assistance & Dissemination:
- Develop an EB *TA process.*
- Develop & deliver *differentiated* TA at universal, targeted, and intensive levels
- Implement *assessments to measure the readiness* of potential targeted & intensive TA recipients
- Develop a *fidelity tool* to measure the implementation of EB TA practices
- Maintain interactive dissemination *website*
- Disseminate *consensus papers*, *briefs and articles*

Collaboration:
- Identify cross sector *affinity group members*
- Identify economies of scale and *dissemination strategies* to leverage across agencies and organizations

Outcomes

Short Term (knowledge/skills)

- Consumers report ECPC materials and resources are high Quality, Relevant, and Useful (Q,R,U)
- TA recipients report ECPC TA was HQ,R, U.
- Leadership Institute participants report on Q,R U of trainings.
- IHE faculty report on Q,R,U of trainings
- ECPC collaborators report on Q, R, U of the collaboration.
- State EC personnel report increased knowledge and skills regarding effective EC practices

Intermediate (behavior)

- State EC personnel, Leadership Institute and IHE faculty participants report *application* of knowledge and skills to their work
- States receiving targeted and intensive TA align their state standards with national standards, integrate DEC RPs, utilize adult learning principles and use implementation supports
- States receiving intensive TA have effective CSPD
- IHEs increase their alignment of curricula with EC personnel standards

Long Term (condition)

- State EC personnel meet EC standards & have the requisite knowledge & skills to provide quality services
- OSEP-funded EC projects & EC PD organizations demonstrate evidence of ongoing collaboration to sustain high quality practices in EC
- Children & Families have access to high quality early childhood services

Internal Evaluation

External Evaluation

Finally, the internal and EEC evaluation teams will develop an annual Data Collection Schedule to provide an overview of key data collection tasks to ensure timely collection and reporting of data in electronic, oral, or written formats. The data collection activities and schedule will be discussed monthly on a call with the internal and EEC evaluation teams to ensure that the Evaluation Plan timelines are met.

Assessing Reach to Target Populations. The center will disseminate information in a variety of formats and media. To determine whether the center's products and services have reached its target population, a multi-pronged approach to the evaluation of dissemination activities will be utilized. As all information regarding the center will be presented on the website, information regarding the number of visits and downloads from the site will be tracked using Google Analytics. Annually, representatives from our center's intended audiences will be surveyed about the quality, relevance, usefulness of the website. For specific products, the center website will require that the person downloading the product provide an e-mail address. The individuals downloading products will be surveyed regarding the quality, relevance, and usefulness of ECPC II developed products and how they are applying these products to their own work. Information from the center will also be presented at conferences and webinars. Consumer satisfaction surveys will be conducted for all presentations as described in the next section. For one of the survey items, participants will be required to indicate their role (e.g. higher education faculty, Part C, 619), which will serve as an indication of center reach to targeted audiences.

Measuring Implementation Progress. The internal evaluation team will meet regularly to monitor the center's progress in implementing each center activity (see Appendix A: excerpts of the ECPC II Evaluation plan. The full plan by activity for each objective is on the password protected link to supplemental materials.). These data will also be shared during the monthly virtual collaboration meeting with OSEP. In addition, the internal evaluation team will create a quarterly report to be shared with the OSEP Project Officer to summarize the status of each of the center's activities. To address one of the Program Performance Measures, measurable milestones will be established and the percentage of milestones achieved will be reported in the 524B Report.

Evaluation Plan (Appendix A). Specific evaluation questions and performance targets guide each center activity. The evaluation plan depicts both Program (GPRA) and Project performance measures for each strategy, including detailed descriptions of the data sources, responsible data collection party, methods analyses, timelines for collection, and reporting. The formative evaluation will target the process components of performance measures to produce information about the implementation, fidelity, quality, and stakeholder satisfaction with center resources, tools, and TA services. These data will inform continuous improvement opportunities and midcourse corrections, if necessary. The summative evaluation will assess the quality, relevance, and usefulness of ECPC II's products and services, their application and, ultimately, the impact on consumers and the young children and families with disabilities they serve.

(i) Methods Are thorough, feasible, and appropriate. Our evaluation assesses key implementation components for each of the ECPC II activity areas. The Evaluation Plan

identifies process and outcome performance measures that will provide quantitative and qualitative data to assess progress, challenges, and successes in achieving the goals of each strategy area. EEC uses a mixed methodology approach to evaluation that produces richer, more useful data. All methods employed address the overarching goal of tracking, measuring, and understanding ECPC II efforts and the degree to which consumers are satisfied that their needs are reflected in the following areas: 1) knowledge and material development activities and 2) applicable TA products and tools and 3) Universal, Targeted and Intensive technical assistance services. A variety of methods including document reviews, content analysis, surveys, interviews and case studies will be used to identify overall quality, relevance and usefulness of products, tools, and services and, more importantly, their impact on early childhood personnel and those they serve. Evaluation will be focused on effectiveness of implementation, progress toward achieving outcomes, impact, and stakeholder satisfaction. All instruments and procedures will be designed, tested, and implemented in accordance with standard evaluation protocols (Dillman, Smyth, & Melani, 2008; Fowler, 2008; Krueger & Casey, 2015). The following describes the data collection methods and data we will employ to measure ECPC II processes and outcomes.

Surveys and Interviews. Understanding client satisfaction is an important evaluation activity that informs service impact and opportunities for improvement. Recipients will be surveyed and interviewed across the three TA service tiers to assess the quality, relevance, and usefulness of the support they received (Appendix A: Sample ECPC II Client Survey and Interview Guide). For example, a sample of Universal TA recipients (e.g., web site users) will be surveyed to determine the quality, relevance, and usefulness of this resource and to recommend changes. Likewise, a sample of clients receiving Targeted TA (e.g., Leadership Institute participants, IHE faculty, SEA representatives) will be surveyed and interviewed to assess applications and outcomes resulting from the TA. In addition to administering targeted surveys and interviews, EEC will conduct document reviews of reported changes to policies, programs, practices, procedures, or operations for recipients of Targeted and Intensive TA. Finally, a sample of states receiving Intensive TA will be selected for case study analyses, described below. In addition to the specific measures for each type of technical assistance, surveys will include items to assess perceptions of knowledge gained resulting from the TA activity.

Quality Assurance Reviews of Knowledge Development Products and Tools. Annually, EEC will administer Quality Assurance Rating (QAR) surveys to consumers of knowledge development resources, materials and tools. The QAR survey is based on OSEP's quality indicators and consists of seven scaled items and three open response items (1 per construct) under the following constructs: Quality (Substance and Communication); Relevance (Need, Pertinence, and Reach); and Usefulness (Ease and Suitability) (Appendix A: Generic QAR Survey). The internal and EEC evaluation teams will develop the survey, which will be administered, analyzed and reported by EEC. To complement and triangulate survey data, EEC will interview a sample of survey respondents to focus on the strengths and weaknesses of the targeted products, gathering in-depth contextual insights, and eliciting recommendations for

improvement. This information will improve existing products and provide the center with information to guide the design and implementation of future TA services and products.

Fidelity of Implementation To evaluate the fidelity of implementation for intensive TA, ECPC I strategic planning manuals and guidance documents will be revised and updated based on lessons learned from TA provision during ECPC I. The manuals and guidance documents highlight the procedures and data collection activities that are required to deliver and monitor the TA with fidelity (Appendix A). To summarize, meeting agendas and minutes are collected for all Intensive technical assistance activities. Baseline and post-technical assistance data is collected on the CSPD self-evaluation and products for each sub-element of the CSPD are collected. These data inform the extent to which the TA was implemented as planned, with fidelity to the TA model.

TA Quality Rating Rubric. The formative and EEC evaluation teams will adapt "IDC's Intensive TA Quality Rating Rubric" (Appendix A: IDC Intensive TA Rubric Summary). The rating rubric is designed to measure the extent to which TA providers are implementing high quality, Intensive technical assistance across five domains: Clarity (state commitment, discovery, and planning); Integrity (faithfulness of implementation); Intensity (frequency, type, and duration); Accountability (outputs and outcomes); and Management of the TA Effort. EEC evaluators will use document reviews of the TA Planning Tool and TA Tracking System, and survey and interview data to inform the Quality Rating Rubric for each state receiving Intensive TA, looking for changes to state policies, procedures, processes, and operations. It is anticipated that the rating rubric will be completed three times over the course of TA delivery; at the start, mid-way and at the end of TA, with progress reports submitted annually in the 524B Performance Report. Data from this tool will assist ECPC II leadership in the following ways: periodic monitoring of critical dimensions of quality TA using a standardized instrument; gauging the effects and implementation of the TA across time, TA providers and recipients; and determining when to make mid-course corrections in the provision of TA, if warranted.

Collaborative Mapping. The degree to which ECPC II creates and sustains collaborations with key stakeholders and partners with similar goals and outcomes is another critical element to evaluate. Researchers acknowledge that there are stages of collaboration ranging from initial communication and networking to forming a unified, transformative team (Frey, Lohmeier, Lee, & Tollefson, 2006). The design for this component of the evaluation includes three discrete methods of data collection: 1) using quarterly TA reports, a "Collaboration Map" will be developed and reported to illustrate the key collaborators (actors/partners), the context of their activity (themes and content) and the "strength" of their collaborations; 2) online administration of the validated "Partner Survey" (www.partnertool.net) of key partners to understand the activities of the center, and later the outcomes and benefits of the collaboration; and 3) in-depth interviews with key partners to better understand the quality of the collaborative relationships. Additional survey questions will be added to the "Partner Survey" to rate other perceived and realized benefits of the collaboration, such as: decreased duplication of TA efforts; increased use of common language and messages to the field; and

overall improved and aligned TA to states. A report of findings will be issued in the spring prior to the 524B annual Continuation Performance Report submission.

Intensive TA Case Studies. A final method of assessment includes conducting in-depth, state- specific outcome or impact studies to determine achievement of the center long-term outcomes in selected sites. Once the states have been identified for intensive TA and initial baseline data have been collected, a sample will be selected to track TA progress and effects. Using the tools described above to establish baseline, the evaluation team, in collaboration with leadership will select three to four cases for in-depth analysis. Case selection may be based on the need to focus on one element of systems change, for example alignment of state standards with national standards, or may be selected for review to determine how a state made significant reforms to their CSPD. Using standard evaluation methods, both quantitative and qualitative data will be collected to: 1) explain the factors that resulted in positive outcomes for ECPC II TA recipients (e.g., SEAs, IHE faculty, Leadership Institute participants); 2) identify the barriers and strategies states and IHEs used to mitigate them; and 3) lessons learned that could help inform similar systems change efforts in other states or IHE settings.

The Success Case Method (SCM) (Brinkerhoff, 2003) provides a means to focus on a specific technical assistance initiative to learn what activities were carried out, how effective the process was, what progress was made toward achieving specific outcomes, and what can be learned from this and applied to subsequent technical assistance. Case study methodology considerations include: 1) definition of purpose (illustrative, implementation-focused, impact-focused); 2) identification of unit of analysis ("case"); 3) selection of Intensive TA "cases"; and 4) data collection strategies (direct observation, interviews, and review of archival records and/or documents). EEC will present and recommend final case study parameters and approaches in collaboration with the center, and cases will incorporate data from the formative evaluation.

(ii) Evaluation provides performance feedback for periodic assessment of progress. The evaluation approach and methods will provide data on the knowledge development activities, varying levels of TA, and collaborative partnerships established to support states in providing effective early childhood services. Evaluation is integral to ECPC II center management and the methods will be implemented with a *utilization* focus. Utilization-Focused evaluation is a process for making decisions in collaboration with an identified group of primary users (e.g., the ECPC II internal evaluation team), focusing on the intended uses of evaluation (Patton, 2014). To that end, evaluation results will be used for decision-making as well as meeting requirements of the funding agency. Regular communication will be established so that results of the evaluation activities are shared with the center's management team to revise the centers' products and services. EEC will develop a Data Collection Schedule that will operationalize the logic model and evaluation plan into a task/timeline map so that data are collected for each of the performance measures. This map will ensure that data is collected and reviewed to assess progress toward the short, intermediate, and long term outcomes.

(iii) Evaluation includes use of objective performance and outcomes measures

As detailed in the Evaluation Plan, the evaluation will be guided by a set of performance measures that address each of the ECPC II objectives. These measures describe the desired level of performance for each of the major objectives and address both process and outcomes. For example, "Annually, 90% of Leadership Institute (LI) survey respondents will rate the Institute as high quality, relevant and useful," with benchmarks established for these measures (i.e., Years 2 & 3 = 80%; Year 4 = 85%; Year 5 = 90%). An Intermediate Outcome measure associated with the impact of the Leadership Institute is: "Annually, 90% of LI survey respondents and interviewees report application of ECPC II recommended policies, practices, procedures or operations to their work (Years 2 & 3 = 80%; Year 4 = 85%; Year 5 = 90%).

D. Adequacy of Center Resources

(1) The extent to which the applicant encourages applications for employment from persons who are members of groups that have traditionally been underrepresented.

The Center will be managed at the UConn School of Medicine, through the CT UCEDD with major subcontracts to Puckett Institute and AEM. Additional subcontracts will be established with nine key TA-Center partners. Each of these subcontract organizations (a) clearly defined commitment to equity and diversity in their employment policies that is consistent with UConn policies (cf. UConn Affirmative Action Policy provided in Appendix A), and (b) documented success in hiring individuals from traditionally under-represented groups. The CT UCEDD has over 30 years of experience in employing diverse individuals, including individuals with disabilities: Currently 80% of the employees of the CT UCEDD identify with a disability or have a family member with a disability.

UConn affirms and protects the right of all individuals to equal opportunity in education and employment without regard to race, color, sex, national origin, age, religion, marital status, disability, veteran status, sexual orientation, or any other extraneous consideration not related to effective performance. This policy complies with all federal, state, and local laws, regulations and executive orders. Confirmation of the University of Oregon commitment to equal opportunity in employment may be obtained from the UConn Office of Diversity and Equity who has a staff member who is a member of the CT UCEDD advisory board.

(i) Qualifications, including relevant training and experience, of key center personnel Directors - all vitae are in Appendix B. In-kind support is represented as a percentage of the total FTE devoted to the center (e.g. .50 total FTE; .35 in kind). Bios for the extensive number of experienced staff and consultants we are employing in Appendix B also.

Mary Beth Bruder, Ph.D., Director (.50; .35 in kind) (UConn) is a tenured professor in the Department of Pediatrics, School of Medicine, at UConn Health and has an appointment in the Neag School of Education at UConn, Storrs. She began her career 40 years ago as a public school special education preschool teacher in inclusive settings in Vermont during which time she served as a BEH intern. She also consulted with Head Start and Child Care Programs on the inclusion of young children with disabilities. She then received her PhD in 1983 at the University of Oregon in Early Childhood Intervention as a BEH/OSEP scholar. For the past 30 years, Dr. Bruder has been at the UConn School of Medicine, where she has developed, designed and directed a wide range of grant funded demonstration, training, outreach, research, and technical assistance centers that have been interdisciplinary and focused on facilitating the development of infants and young children and their families who are at risk for, or have disabilities. Dr. Bruder has received over 75 million dollars of state and federal extramural funding to support her work. For example, her state contracts included a 15 year technical assistance center on training child care providers to include children with disabilities, and a state replication of the EC Pyramid Model and coaching. Her federal grants included 10 model demonstration and outreach

programs on inclusive service delivery and in-service training(OSEP), 13 personnel preparation projects (OSEP), including doctoral/leadership, all of which were/are interdisciplinary, the first interdisciplinary training and technical assistance center for IHE faculty, and a training and technical assistance demonstration and outreach project for child care providers on including preschool age children with disabilities into child care classrooms (OSEP). She has also directed 3 national research institutes which had translational training components, and served as a staff member on the CFSEL and a consultant on the Early Childhood Outcomes Center, the DaSy and the ECTA centers. She directed the HHS funded TA Center, Map to Inclusive Child Care which resulted in 26 state strategic plans and outcomes that included training for child care and specialty providers on practices to ensure that all young children had access to inclusive child care. She co-directed with Vicki Stayton the Center to Inform Personnel Preparation Policy and Practice in Early Intervention and Preschool Education (CIPP) (OSEP)and she co-directs the Early Childhood Personnel Center with Dr. Sugai. She also participated as a member of the DEC personnel standards council, and on the original DEC recommended practices workgroup, and most recently was a member of the DEC recommended practices Gap Analysis Work Group. Currently she is the director of the CT UCEDD (HHS-AIDD) (past 17 years), and the CT LEND interdisciplinary leadership training program (MCHB). She is on the editorial boards of early childhood intervention journals, and is the editor of Infants and Young Children. She is also on the board of the International Society for Early Intervention. Mary Beth is the mother of 4 daughters, adopted internationally, who have disabilities and special health care needs.

George Sugai, Ph.D., Co-Director (.10) (UConn) received his M.Ed. in 1974 and Ph.D. in 1980 at the University of Washington, and is the Carole J. Neag Endowed Chair in Behavior Disorders and professor with tenure. He is senior research scientist and former Director of the Center for Behavioral Education and Research in the Neag School of Education, which focuses on research and outreach activities related to promoting effective academic and social behavior supports. Dr. Sugai has presented at numerous local, national, and international conferences and professional meetings, and has served as advisor to the U.S. Departments of Education, Justice, and Health and Human Services. As Center Director or Co-Director of major training or research grants totaling over $60 million, Dr. Sugai has ample experience in the implementation, operation, and supervision of grant-related centers. Since 1997, Dr. Sugai has been co-director (with Rob Horner at the University of Oregon and Tim Lewis at the University of Missouri) of the National Center on Positive Behavioral Interventions and Supports. The Center had been established by the OSEP, US Department of Education to give schools capacity-building information and technical assistance for identifying, adapting, and sustaining effective school-wide disciplinary practices. Since 2012 he has co-directed (with Mary Beth Bruder) the OSEP funded ECPC.

Vicki Stayton, Ph.D., Co-Director (.25) is Distinguished University Professor Emerita of Interdisciplinary Early Childhood Education (IECE), School of Teacher Education, Western Kentucky University (WKU). At WKU, she coordinated the BS and MAT blended Early Childhood and Early Childhood Special Education (EC/ECSE) programs. Her

research/scholarly activities have focused on personnel preparation. Dr. Stayton was PI or Co-PI on 5 state and 7 OSEP grants specific to preservice education and professional development totaling over 6.5 million dollars. She was Co-PI on the OSEP funded Research Center on Personnel with Dr. Bruder: The Center to Inform Personnel Preparation Policy and Practice in Early Intervention and Preschool Education (CIPP). She has been active in both state and national initiatives having served as a Past-President of the Division for Early Childhood (DEC) of the Council for Exceptional Children (CEC), as chair of DEC's Personnel Preparation Committee, and co-chair of the personnel preparation strand for DEC's recommended practices. She has served on CEC, NAEYC, and state committees specific to personnel standards and accreditation. Currently, she is a member of the CEC Standards Development Workgroup which will be drafting new CEC personnel standards, DEC's representative to CEC's Knowledge and Skills Subcommittee, and chair of the DEC Personnel Preparation Committee for which she facilitated the 2017 revalidation of DEC's Specialty Sets and revision of its Personnel Standards Position Statement. She has been key personnel on the ECPC and among her responsibilities has been the development of a rubric for the DEC recommended practices and personnel standards for courses and modules being developed by ECTA. She has also co-coordinated the cross disciplinary work group with Dr. Long for the past 5 years, continuing work begun under CIPP.

Beth Caron, Ph.D., Associate Director (.30) (AEM) has 25 years' experience in the field of early childhood special education and early learning. She began her career as a direct service provider in home-based and center-based early intervention settings. Dr. Caron worked for nine years at the U.S. Department of Education, including the Office of Special Education Programs, in various roles supporting programs for young children and their families. In her current role as an Associate Director at AEM Corporation, Dr. Caron directs and manages all aspects of the Race to the Top – Early Learning Challenge Technical Assistance contract (ELC TA), which includes supporting state grantees through online communities of practice, face-to-face peer learning opportunities, national meetings, webinars and the development of products and publications. As part of this role, she also facilitates a consortium of TA leaders across federally-funded TA centers to maintain efficient, effective, and high-quality services.

Carl J. Dunst, Ph.D., Associate Director (.20) (Puckett Institute). Carl J. Dunst is Senior Research Scientist at the Orelena Hawks Puckett Institute in Asheville and Morganton, North Carolina. His research and practice spans more than 40 years and includes early intervention, early childhood special education, family and social support, and family-centered practices. His primary areas of interest include evidence-based child, parent-child, and family intervention practices, meta-analyses and research syntheses of child, parent, parent-child, and family practices, and research on inservice professional development, adult learning methods and strategies, and technical assistance to translate research to practices that improve child and family outcomes. He also had developed effective videos and practice guides for evidenced based practices. Dr. Dunst has directed a number of TA centers and has been a consultant for the OSEP funded ECTA and ECPC centers. He has developed practice based checklists for the DEC

RP for ECTA for the past 5 years, and completed research syntheses and data analysis for ECPC for the past 5 years. He is the father of a son with disabilities.

Kim Moherek Sopko, Ed.D., Associate Director (.50). has twenty-seven years of experience in early childhood special education (ECSE). Her career covers a broad range of components in the EI/ECSE field including higher education, direct service and working with families, national policy, research, professional development, and volunteer leadership for professional organizations. She began her career as a direct service provider in non-categorical preschool special education classrooms then quickly became a community-based inclusion specialist to collaborate with early childhood education and care providers in the community to successfully include young children with disabilities in their programs. She was also an early interventionist providing direct services to infants, toddlers, and their families. Currently, Dr. Sopko provides technical assistance (TA) to five states as a leadership consultant with ECPC, and to ECSE program administrators across the state of Virginia as the LEADS Coordinator for Virginia Department of Education's Training and Technical Assistance Center (TTAC) at George Mason University. Dr. Sopko served as faculty at three universities (George Washington University, Old Dominion University, and George Mason University) over the past sixteen years teaching six core graduate ECSE courses; developing and delivering online courses; supervising interns and their university supervisors; revising curriculum; creating and establishing a Ph.D. program; and preparing accreditation reports. She continues to provide professional development opportunities at national, state, and local levels and has authored several publications. Dr. Sopko serves as the Advocacy Team Leader and Children's Advocacy Network Coordinator for the Division for Early Childhood (DEC) of the Council for Exceptional Children (CEC) and previously served as the DEC Leadership Special Interest Group (SIG) co-leader and DEC National SIG leader.

Robin McWilliam, Ph.D., Associate Director (.20; .05) is currently the Department Chair of Special Education and Multiple Abilities at The University of Alabama, College of Education. Previously, he was the Siskin Endowed Chair of Research in Early Childhood Education, Development, and Intervention at Siskin Children's Institute and professor of education at the University of Tennessee at Chattanooga and an adjunct professor of special education at Vanderbilt University. He has formerly been a professor of pediatrics at Vanderbilt University Medical Center, a senior scientist at the Frank Porter Graham Child Development Institute, and a professor of education at the University of North Carolina at Chapel Hill. Dr. McWilliam's research centers on infants, toddlers, and preschoolers with and without disabilities, with a specific focus on child engagement, service delivery models, and collaboration with families. He has provided consultation, training, and technical assistance across the United States and in countries overseas on evidenced based early intervention in natural environments and on the Engagement Classroom Model. His Routines-Based Interview (RBI) has been implemented and scaled up in 26 states. His work currently if focused on building capacity at the state level and IHE faculty and doctoral students about the implementation of evidenced based practices. He has been the editor of the Journal of Early

Intervention and he is a member of the Higher Education Consortium for Special Education and the Council for Exceptional Children (Divisions for Research, Early Childhood, Autism and Developmental Disabilities, and International Special Education Services) and the international editor of Infants and Young Children. He is the father of a daughter with disabilities.

UConn Key Personnel (all have been staff on ECPC I)

Nicholas Gelbar, Ph.D., Evaluation Director (.10 in-kind), is an Assistant Professor in Community Medicine and Health Care at the University of Connecticut Health Center and serves as the Research and Evaluation Director at the University Center for Excellence in Developmental Disabilities (UCEDD). Dr. Gelbar earned his PhD from the University of Connecticut in Educational Psychology with a concentration in School Psychology. Dr. Gelbar has participated in numerous research and evaluation projects including serving as the Internal Evaluator for the Early Childhood Personnel Center for the past 4 years after completing a postdoctoral fellowship at the UConn UCEDD under the supervision of Dr. Brian Reichow.

Annie George-Puskar, M.A., Project Coordinator (1.0 FTE; .25 in kind), is expected to complete her Ph.D. in Early Childhood Intervention Leadership at The University of Connecticut, under the Office of Special Education Programs Leadership Grant (#H325D120097) in Fall 2017. She began her career in early intervention during her undergraduate studies at The Catholic University of America in Washington D.C and through her Post-Graduate Certification in Applied Behavior Analysis at Penn State University. Mrs. George-Puskar has been involved in Early Childhood Personnel Center (ECPC) since its inception in 2013, and she coordinates the follow-up of the Leadership Institute for Part C and 619 coordinators, providing TA for leadership teams, and evaluating action plans and state-self assessments. She has disseminated the results of ECPC at national conferences and on webinars. Most recently, her responsibilities at the CT UCEDD include the Connecticut Early Childhood Intervention Credential Program (OSEP) (hybrid) for cross-disciplinary personnel serving infants and young children with disabilities with high-intensity needs and their families. She is the co-leader of the DEC's Leadership Special Interest Group (SIG), and an active member (since its inception) of the DEC Consortium for Innovations in Doctoral Excellence (DECIDE). She participates on the Early Intervention SIG for the Association for University Centers on Disabilities (AUCD), and is a LEND Trainee under MCHB. Additionally, she is a member of the DEC Student SIG, where she serves as the blog editor. Mrs. George-Puskar is also the personnel representative of the CT Part C ICC.

Betsey Howe, Evaluation Coordinator(.75 FTE; .25 in-kind), is expected to complete her PhD in Early Childhood Intervention Leadership at The University of Connecticut, under the Office of Special Education Programs Leadership Grant (#H325D120097) in Spring, 2018. Betsey received her Master's degree in early childhood special education from the University of Colorado under Dr. Phil Strain. She has worked in the field of early childhood since 1991. Her multiple professional roles include that of a classroom teacher, special education teacher, and a developmental therapist. She has experience working directly with young children and their families in both community early childhood settings, the public school, and in Connecticut's

birth to three system. She is currently coordinating Pyramid replication, coaching with local school districts in CT, and serving as an evaluation intern on the ECPC.

Gabriela Freyre-Calish M.S.W. (.20 FTE;.10 inkind), Diversity and Consumer Coordinator, has been associated with the CT UCEDD for the past 25 years in a training and capacity building role. She began serving as the project coordinator of the Niños Especiales Outreach Training Project which focused on the scaling up of a culturally sensitive model of early intervention to families of Latino heritage. Freyre-Calish has also trained child care providers and provided TA through strategic planning for 10 state teams on child care inclusion of children with disabilities. Most recently she has been coordinating an online hybrid training program in early intervention, and coordinating an online curriculum for medical homes for the CT Department of Public Health. She is the consumer advocate and coordinator of the CT UCEDD Consumer Advisory Council, and the family faculty coordinator for the CT LEND program. She has assisted the ECPC with strategic planning for states receiving intensive TA. She is the service coordinator for her sister, who has severe disabilities and lives with her family in Peru, and she is the mother of twin boys, one of whom has learning disabilities and is legally blind because of retinopathy of prematurity. She is bilingual and bicultural.

Anne Marie Davidson, MS, (.50 FTE in-kind) earned her master's degree in Special Education at the University at Albany, State University of New York and has been working in the field of early childhood special education for 21 years. She has worked with a wide range of children across home and center-based childcare, and preschool classrooms. She has held various roles from being a teacher in a self-contained classroom, to being in an integrated preschool classroom using a co-teaching model, to being a consulting teacher to child care and Head Start. Anne Marie has also been a research assistant in an inclusive birth to three classroom studying social competence. For the past 10 years, Anne Marie has provided professional development and technical assistance to staff and program directors on a variety of topics related to early care and education. These include inclusive practices for young children with disabilities, early childhood curriculum, racial and cultural identity development of young children, and supporting children's social and emotional development. She has recently participated in the process of revising Connecticut's early learning standards and coordinated a project to develop adaptations for the CT ELGs for preschool children with disabilities. She has also been a project coordinator on the CT Pyramid replication. Anne Marie has been providing TA to state Part C and Part B (619) administrators for the past 5 years on the ECPC project.

Other Personnel

Darla Gundler (.20), Family Coordinator and TA Consultant, and her husband Greg, are the proud parents of Zachary and Tiffany. Tiffany was born prematurely and as a result has a profound bilateral hearing loss. In her experience with Tiffany, Ms. Gundler became a very active and effective voice on behalf of families receiving early intervention supports and services. She has been the Director of the Early Intervention Parent Leadership Project in Massachusetts for 20 years. Ms. Gundler works with the early intervention system to continually create a well informed parent constituency throughout the Commonwealth of Massachusetts. In

addition, she staffs the federally mandated Interagency Coordinating Council for Part C of IDEA at the Department of Public Health. Most recently, Ms. Gundler has taken her understanding of the IDEA Part C system, and her experience as a family leader, to assist in becoming the co-chair of the Family Council for the Division of Early Childhood (DEC) under the Council for Exceptional Children (CEC). In this role she is able to continue the vison of the Early Intervention Family Alliance (EIFA), in which Ms. Gundler was one of the founding members and Past-President. Ms. Gundler and her fellow family members across the country began the development of a national family group that would bring the family voice to the policy makers within the Part C and early childhood arena.

Patricia H. Mueller, Ed.D. (.25), External Evaluator, is President and founder of Evergreen Evaluation & Consulting, Inc., (EEC) a woman-owned firm specializing in evaluation of federal-funded programs. Dr. Mueller began her career as a special education teacher in VT where she has also been a special education director. Dr. Mueller has extensive experience in writing and evaluating federally funded education initiatives to include: National Technical Assistance & Dissemination Centers (ECPC, ECTA, DaSy, NCEO), State Personnel Development Grants in several states (VT, NH, MS, AL, NC, DE), Educational Technology centers (CAST, CTD), Parent centers (CPIR) and personnel preparation programs. EEC is the external evaluator for three states' SSIPs (MD, VT & RI). Mueller employs a systematic approach to evaluation that incorporates best practice strategies in the field of evaluation. These are evident in all EEC centers and have been found to yield the formative data necessary for clients to make informed decisions for program management and to provide summative information relative to the overall success of the center. For more information, the EEC website is located at www.eecvt.com.

Other Staff and Consultants are listed on Table 4 according to the Center Goal they will be assisting to accomplish. All have responsibilities as delineated in their commitment letters and on the work scope and time chart in Appendix A. In addition, Doctoral students and Post-Doctoral Students will be employed at the center using funding from the CT UCEDD. We are also providing funding for a virtual doctoral student for each year at DEC and scholarships for doctoral students (and families) to attend the DEC annual meeting.

Table 4. ***Sub Contractors and Consultants***

Knowledge and Materials (Resources and Tools) Development(Dunst) (OPI = Orelena Hawks Puckett Institute			
Devon Embler	OPI - Video Specialist	Koki Roberts	OPI - Research Analyst
Larry Edelman	Media Consulant	Helen Wilkie	OPI - Research Asst
Deb Hamby	OPI - Research Analyst		
Targeted TA Consultants for Part C and Part B 619 Administrators(Sopko)			
Libby Doggett	Consultant	Lynn Kagan	Columbia University
Lise Fox	U of Florida	Nancy Reder	NASDSE

Maureen Greer	ICTA	Jody Whitman	Zero to Three
Darla Gundler	DEC	Deborah Ziegler	CEC
Targeted TA Consultants for IHE/PD(McWilliam)			
Jeffrey Anderson	HECSE	Ben Kaufman	AUCD
Mary Brownell	University of Florida	Toby Long	Georgetown University
Margie Crutchfield	Personnel Standards Consultant	Erica McCray	University of Florida
Angel Fettig	University of WA	Georgette Nemr	CT State Department
Michael Guralnick	University of WA	Patti Prelock	University of Vermont
Eva Horn	University of Kansas	Phil Rogers	NASDTEC
Intensive TA Consultants (Sopko)			
Eva Horn	University of Kansas Original TA consultant	Phil Strain	University of Colorado, Denver
Susan Maude	Iowa State University Original TA consultant	Jane Squires	U of O UCEDD Original TA consultant
Verna Thompson	619 Consultant	Natalie Whitfield	U of VT UCEDD Current TA consultant
Juliann Woods	Florida State University Original TA consultant	Darla Gundler	Family Consultant
Cross Disciplinary Workgroup: Alignments and Applications			
(coordinators Toby Long-AUCD;APTA and Stayton)			
Jennifer Bullock	CEC	Catriona Macdonald	ASTHVI
Tricia Catalino	APTA	Cindy Miles	APTA
Lisa Chiarello	APTA	Marica Mitchell	NAEYC
Janet Deppe	ASHA	Mary Muhlenhaupt	AOTA
Lynette Fraga	Child Care Aware	Patti Prelock	ASHA
Rolf Grafwallner	CCSSO	John Pruette	NAECS-SDE
Ben Kaufman	AUCD	Marcia Rock	CEC TED/UNC
Katherine Kempe	NAEYC	Sandra Schefkind	AOTA
Peggy Kemp	DEC	Karen Voytecki	CEC TED
Diana LaRocco	DEC	Yasmina Vinci	NHSA
Sara LeMoine	Zero to Three	Cindy Brown	619 Affinity Group at NASDSE
Collaborations: Partner TA Centers (Caron)			
DaSy	CEELO	ECSTAC	PBIS
CEEDAR	Child Care Aware	NCSI	SwiftSchools

AEM	Zero to Three	IDC	Child Trends
EHS-CC	NCECDTL		

(ii) Adequacy of support

The University of Connecticut A.J. Pappanikou Center for Excellence in Developmental Disabilities Education, Research, and Service (CT UCEDD) is administered by the University of Connecticut School of Medicine, Farmington, CT, and is affiliated with all UConn schools and campuses. The center currently employs 25 interdisciplinary staff representing a variety of experiential, training, and multicultural perspectives, currently 80% of the staff either has a disability or has a family member with a disability. The goal of CT UCEDD is to develop, implement, and disseminate a coordinated group of applied research, demonstration and training centers directed at meeting the needs of persons with disabilities and their families in community based settings. The center's consumer population is interdisciplinary and have included Head Start, child care, nurses, physicians, early intervention special education teachers, early childhood teachers and administrators, therapists, and direct care providers. Training has been offered in multiple languages, and major initiatives have included cultural competence and the use of technology. The UCEDD has been offering on-line training for 10 years and has designed 7 courses that are available through UConn. All of these centers were developed in-house using existing technologies under the supervision of an instructional designer. See (http://www.uconnucedd.org/centers/EISP/default/htm). In addition, the CT UCEDD is affiliated with a number of community based organizations for families and persons with disabilities all of whom have representatives on our Consumer Advisory Council (CAC) with other parents and consumer organizations. These include: Connecticut Family Voices, the CT Family-to-Family Health Information Network, CT Kids As Self Advocates (CT KASA), the Citizens Coalition for Equal Access, and the CT Alliance for Disability. **Computing and Data Management**. The center owns a vast array of software packages to provide data analysis, word processing, presentation and desktop publishing capabilities. These packages include Microsoft Office (Word, Excel, PowerPoint, Access), Adobe PageMaker and Quark Express. Beyond word processing and desktop publishing, the center also owns software to provide web page and multimedia authoring, image processing, data collection and statistical analysis functionality. Lastly, the center maintains computing facilities through an in-house computer system to conduct statistical analysis (SPSS). **Web Based Resources.** The center recently acquired a dedicated state-of-the-art web, file and database server to support all research and education initiatives. This server is used to host all e-learning courses and modules developed by the center. As part of this process, we have installed a multimedia/communication server software package to enable creation of rich-media content within the proposed e-learning courses. This software extends our capabilities by providing streaming video applications (one-to-one video conferencing, one-to-many video broadcasting, and multi-way video collaboration), web-based presentations (with streaming audio) synchronous (via shared whiteboard and chat) and asynchronous (via web forum) collaboration. These capabilities

enable course directors to deploy engaging, interactive activities within our e-learning offerings. All course content is accessible to students through a standard web browser/plug-in interface. The center's website has been recently redesigned to incorporate accessible and universal design principles and meet Section 504 standards to accommodate people with visual disabilities. This includes providing alternative style sheets to enable customized visual settings for enhanced readability. **Facilities and Equipment**. The UCEDD is located in an office building on the property of UConn Health. There are approximately 6,000 square feet paid for by the State of CT through annual allocations to the UConn School of Medicine. The center maintains appropriate administrative and clerical services for staff. The center's computer networking system is serviced and maintained by the Health Center's Information Technology Services unit. The center has a dedicated web, file and database server to support all research and education initiatives. The center also has copying, word processing, image processing, desktop publishing, data entry, and statistical analysis capabilities within its offices.

Puckett Institute. The Orelena Hawks Puckett Institute is a not-for-profit organization engaging in activities that enhance and promote healthy child, parent, and family functioning. The goal of the Puckett Institute is to foster adoption of policies and practices that build on the capabilities and strengths of families, public and private organizations, and communities. Puckett Institute is dedicated to the advancement of practices that are respectful and sensitive to cultural, racial, ethnic, and socio-economic diversity and which have competency-enhancing influences. **Physical Facilities.** The Puckett Institute has the necessary physical facilities and equipment for the proposed center activities including work areas (i.e., office space, conference room, library), and the necessary office resources (e.g., file cabinets, phones) for staff. **Institute Library.** The Puckett Institute maintains an extensive in-house library of over 25,000 books, journals, and reference materials. A particularly strong aspect of the library is the holdings in research methodology and professional development. Over 40 special education and psychology journals are also available. Major university libraries are within easy access. **Computer Capabilities for Word Processing and Data Storage and Analysis.** An Intel Core i 3 computer is available for use by the center staff. Microsoft PowerPoint software is available for power point presentations, etc. An in-house computer system for the statistical analysis needs of the center which includes SPSS Version 23, BMDP (biomedical statistical analysis program), and other research software is available to center staff. **Production Capabilities.** Puckett Institute has the following production resources. We have a Sony HDV 1080i HD camera for professional broadcast quality footage which has 3-CCD technology and a range of 30 - 60 fps progressive scan technology and a Sony Cybershot 6 Mega pixel and Carl Zeiss lens for high quality photos. For producing quality videos to deliver dynamic visuals, a MAC G-5 with Final Cut Pro 10.0 and Compressor, DVD Studio Pro and After Effects CS4 Professional software for 2D and 3D graphics effects. We use Digital Juice professional use royalty free music. We have Adobe Creative Suite which includes PhotoShop, In-Design, and Illustrator. Sony Sound Forge 8.0 is used for producing professional audio files. Macromedia Flash MX, Compressor, and Adobe After Effects provide highest quality video web compression for the web. **Support**

Services. Puckett Institute maintains Grants Management Office staff to provide the necessary resources to oversee the grants management, fiscal, and accounting needs of the center. Our recently completed audit found no problems with respect to the Institute's operational system.

AEM is one of the U.S. Department of Education's (ED) premier technical assistance and data management partners with 15 years' experience supporting 27 program offices, 60 states and territories, 17,000+ districts and over 240 grantees. AEM provides extensive program and center management experience, technical skills, and subject matter expertise to support federal, state, and local initiatives to improve education for students across the country. AEM employs a strong collaboration approach to all our partnerships, whether in the prime or subcontractor role. AEM shares and deploys established processes, tools, and frameworks to meet the unique requirements of each center and ensure its success. The processes are innovative and flexible, with focused attention on the specific objectives and approach of the center, the needs of ED and the states, districts, and organizations they support. AEM works with partners to tailor technical assistance services to evolving state and local needs, as well as needs within ED. These include innovative and research-based programs in four primary technical assistance areas: content expertise; individualized supports; peer-to-peer connections; and facilitated convening. AEM staff have developed best practice guides and rubrics for implementation which are used in all 60 of the U.S. state education agencies to help policymakers and educators to improve service to students and parents from early childhood through college and career. Content expertise has been utilized in several OSEP-funded centers including the Center for the Integration of IDEA Data (CIID), the Early Childhood Data Systems (DaSy), and the IDEA Data Center (IDC). Through the work of these three OSEP-funded national centers, AEM is working with State and local education and early learning agencies on data quality, data integration and data use. AEM is also the prime contractor providing technical assistance to both the Preschool Development Grantees and the Race to the Top Early Learning Challenge Grantees. The Early Learning Challenge Technical Assistance (ELC TA) Program provides and facilitates responsive, timely, and high-quality TA to support grantees in the development and enhancement of early learning systems.

(iii) Costs are reasonable in relation to the anticipated results and benefits

The budget costs are reasonable for the expansive workscope proposed in this proposal. Center contractors, consultants and partners realize the scope of the center and will commit organizational resources to insure the work gets accomplished.

E. Quality of Management Plan

We have intentionally established the ECPC II as a single, integrated effort to improve professional development and assist states to develop and maintain an integrated cross sector CSPD (see Figure 18). Although we have multiple directors working in sites at considerable distance from each other, the issues we are working on are inextricably linked, both conceptually and procedurally. As a result, all center activities reflect a unified purpose within a transactional model, with each activity both shaping and being shaped by the other activities. We will achieve this unified, integrated effort through the center's organization, a planned sequence of interdependent activities, and frequent use of multiple channels of communication and current technology, and linkages with other collaborators. Specifically, six strategies will ensure coordinated and consistent communication between personnel, facilitate the timely accomplishment of center tasks, and ensure that feedback from the multiple consultants and partners is secured and integrated for continuous improvement. *First*, the collaborators on this proposal represent a group of highly committed and experienced individuals immersed in personnel development and technical assistance for infants and young children with disabilities and their families, and who are also actively engaged in their respective state level early childhood workforce activities, and national workforce committees. These day-to-day interactions range from practicum supervision to doctoral research mentoring, to state policy work, to coaching teachers and families and the development of cross sector professional development competencies for inclusion. *Second*, the division-of-labor tasks and systematic communication plan are explicit so that personnel at each site can focus on their respective areas of responsibility, implement, report progress, and receive feedback. *Third*, our use of technology will support across and within-site communication, progress monitoring, assigning or reassigning tasks to appropriate personnel, and monitoring implementation and completion of assigned tasks asynchronously, an important element for multi-time zone site collaborations. Personnel will have a Center calendar of activities and an individualized schedule to ensure timely activity completion and data submission. Associate Directors will input weekly updates on state activities. The Center Coordinator will update calendars, revise activities, and post feedback weekly using center management software (Smart Sheet which has been used in ECPC I.). *Fourth*, bi weekly, monthly and quarterly meetings using video-communications (e.g., web conferencing software, ZOOM, GoToMeeting) will be held with specific Center Directors and coordinators to facilitate consistent communication among personnel. Fifth, the full range of internal center evaluation activities described in the Evaluation Plan section of the application will be used for measuring progress in accomplishing center activities, evaluating how the activities are conducted, revised accordingly to assure the effectiveness and efficiency of administration and management practices. This plan engages multiple perspectives in continuous progress monitoring to promote quick response for revisions or innovations. Additionally, we will have monthly meetings with our external evaluators to review data and to revise activities as

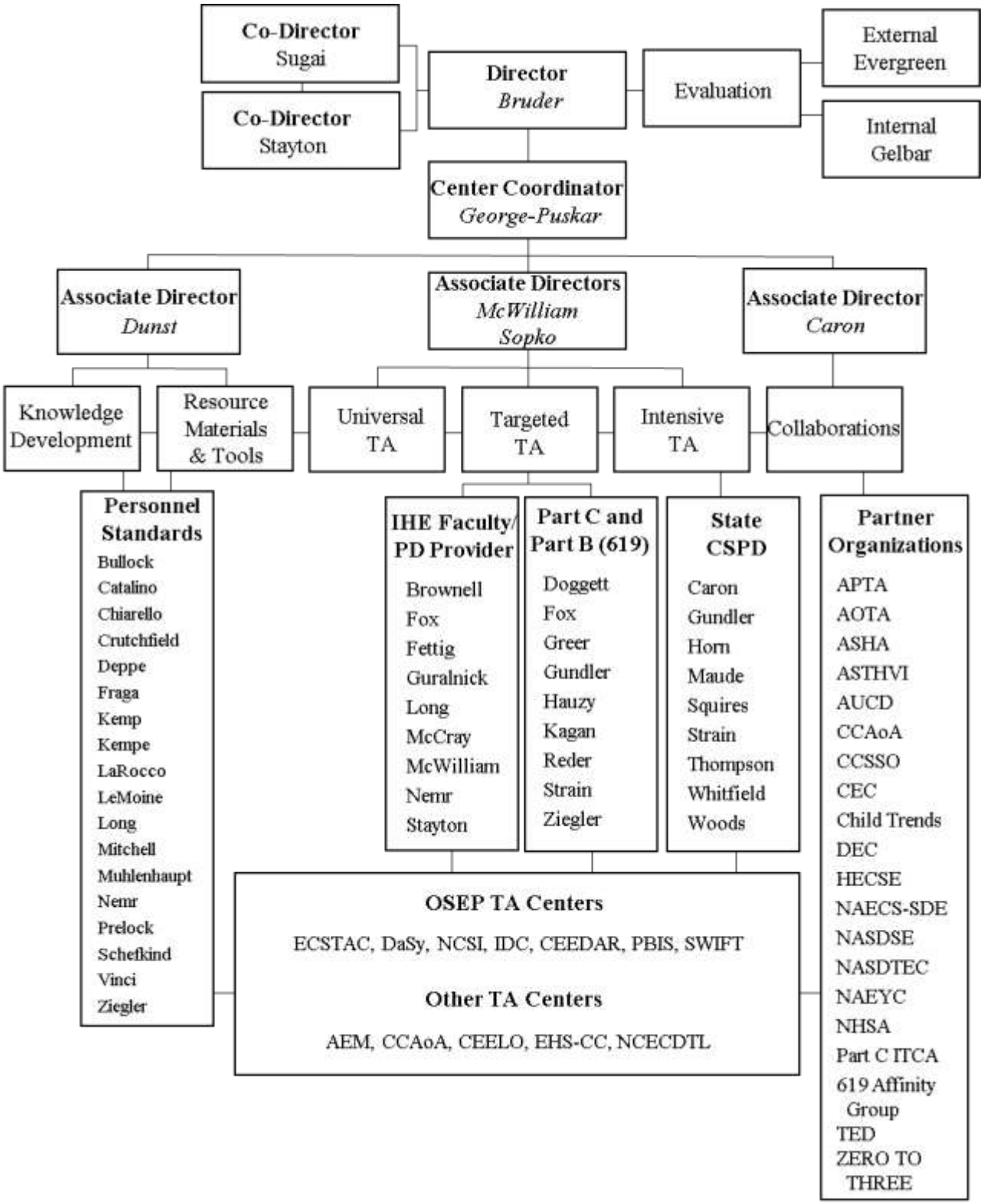


Figure 18 ECPC II Organizational Chart.

necessary, and monthly meetings via phone with the OSEP center officer to review progress and discuss revisions to the work scope as needed.

All consultants and contractors will be assigned to a team by objective and workscope and each will have a co-director or associate director as team leader. The teams will meet monthly via video communication links and written reports on their workscope are required by each consultant or contractor in order to receive their funding. We had a number of the same contractors and consultants on ECPC I and we were able to meet all evaluation benchmarks through the management by objective model we use.

(i) Plan to achieve the objectives of the proposed center on time and within budget, including defined responsibilities, timelines, and milestones for accomplishing center tasks.

The center has five primary center goals that were described in section b. Each goal has objectives, and activities. Appendix A contains a table that delineates these with timelines and lead staff responsible for achieving each activity, evaluation tables and a time commitment table for center staff. An organizational chart for the center is in Appendix A.

(ii) Time commitments of the center director, center staff, and center consultants or subcontractors are appropriate and adequate to meet the objectives of the proposed center

Appendix A also has an effort chart across the personnel to delineate time on each Goal Area.

(iii) Mechanisms for quality assurance of products and services

Four mechanisms will be used to assure quality in the products and services to be delivered. *First,* the personnel assigned to Center objectives and activities have extensive records of delivering high quality products and were selected because of their track records. *Second*, a systematic process for the identification and review of proposed products and services will be implemented internally. This review will include not only the proposed staff or consultants who develop the product or implement the service, but also a review team to include directors, consultants, partners, and state level stakeholders (when materials/services are focused on state level needs). The web site will include a password-protected repository for materials and proposals under development. Reviewers will sign on when invited, interact with the materials similar to conducting product reviews for commercial products or peer review of manuscripts, respond to questions and offer feedback. The data will be summarized and returned to the ECPC staff for refinements as needed. Additional review could include the evaluation panel if needed. *Third*, state level materials and services will be identified through an iterative process involving the ECPC affinity group and partner organizations. These groups will be involved in collaborating on the development of materials to assure the sustainability and utilization of them.

(iv) A diversity of perspectives are included in the center

An integrated system of personnel development must be built on relationships that are respectful of all who participate as leaders, recipients or beneficiaries. This commitment will be evident throughout the Center's personnel, consultants and collaborators and affinity groups. The Center's vision is not simply to identify individuals with disabilities or underrepresented populations to participate but to infuse the values of diversity and inclusion throughout each action and outcome. Consultants, and CoP representatives, have specifically been identified

because of their commitment to diversity and inclusion. Any center participant (across center activities and states), will be recruited to increase the diversity of perspectives available as resources for the Center. We are dedicating one staff person (Freyre) who is bi-cultural and bi-lingual and who is both a parent and a sister of an individual with disabilities to do member checks across all our state and national work teams ensure diversity and access to participation by underrepresented members of the population. Ms. Freyre coordinates the CT UCEDD consumer advisory board (CAC) and as such reviews each UCEDD project and activity with representatives from the CAC (who are a diverse group of persons with and without disabilities). She also coordinates a diversity and equity project at the CT UCEDD. She has involved members of the CAC for the development of this proposal. The group of family members, persons with disabilities and service representatives provided input the goals of this proposal and will continue to provide input as a responsibility as a member of the CT UCEDD CAC, if the ECPC is funded.

References

Abbitt, J. T., & Klett, M. D. (2004). Identifying influences on attitudes and self-efficacy beliefs towards technology integration among pre-service educators. *Electronic Journal for the Integration of Technology in Education, 6*, 28-42.

Allen, L., & Kelly, B. B. (Eds.). (2015a). *Professional learning for the care and education workforce*. Washington, DC: The National Academies Press. Available at: http://www.nap.edu/catalog/21786/professional-learning-for-the-care-and-education-workforce.

Allen, L., & Kelly, B. B. (Eds.). (2015b). *Transforming the workforce for children age birth through 8: A unifying foundation*. Washington, DC: The National Academies Press. Available at http://www.nap.edu/catalog.php?record_id19401.

Artman-Meeker, K., Hemmeter, M. L., & Snyder, P. (2014). Effects of distance coaching on teachers' use of Pyramid Model Practices: A pilot study. *Infants and Young Children, 27*(4), 235-344. doi: 10.1097/IYC.000000000000001

Bailey, D. B., Buysse, V., & Palsha, S. (1990). Self-ratings of professional knowledge and skills in early intervention. *The Journal of Special Education, 23*(4), 423-435.

Bailey, D. B., Palsha, S. A., & Huntington, G. S. (1990). Preservice preparation of special education to serve infants with handicaps and their families: Current status and training needs. *Journal of Early Intervention, 14*(1), 43-54. doi: 10.1177/105381519001400104

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Barnett, W. S., Carolan, M. E., Squires, J. H., Brown, K. C., & Horowitz, M. (2015). *The state of preschool 2014: State preschool yearbook*. New Brunswick, NJ: National Institute for Early Education Research. Available at http://nieer.org/sites/nieer/files/yearbook2014_full.pdf.

Barnett, W. S., Friedman-Krauss, A. H., Weisenfeld, G. G., Horowitz, M., Kasmin, R., & Squires, J. H. (2017). *The state of preschool 2017: State preschool yearbook*. New Brunswick, NJ: National Institute for Early Education Research. Available at http://nieer.org/sites/nieer.

Barton, E. E., & Smith, B. J. (2015). Advancing high-quality preschool inclusion: A discussion and recommendations for the field. *Topics in Early Childhood Special Education, 35*(2), 69-78. doi: 10.1177/0271121415583048

Blase, K. A. (2009). Technical assistance to promote service and system change: Roadmap to effective intervention practices #4. Tampa, FL: University of South Florida, Technical Assistance Center on Social Emotional Intervention for Young Children.

Boe, E. E. (2014). Teacher demand, supply, and shortage in special education: A national perspective. In P. T. Sindelar, E. D. McCray, M. T. Brownell & B. Lignugaris/Kraft (Eds.), *Handbook of research on special education teacher preparation* (pp. 67-93). New York: Routledge.

Brinkerhoff, R. O. (2003). *The success case method*. San Francisco, CA: Berrett-Koehler Publishers.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*, 513-531.

Bronfenbrenner, U. (1992). Ecological systems theory. In R. Vasta (Ed.), *Six theories of child development: Revised formulations and current issues* (pp. 187-249). Philadelphia: Kingsley.

Brown, J. A., & Woods, J. J. (2011). Performance feedback to support instruction with speech-language pathology students on a family-centered interview process. *Infants and Young Children, 24*(1), 42-55. doi: 10.1097/IYC.0b013e3182001bf4

Bruder, M. B. (1997). The effectiveness of specific educational/developmental curricula for children with established disabilities. In M. J. Guralnick (Ed.), *The effectiveness of early intervention: Directions for second generation research* (pp. 523-548). Baltimore, MD: Paul H. Brookes Publishing Co.

Bruder, M. B. (2000a). Family centered early intervention: Clarifying our values for the new millennium. *Topics in Early Childhood Special Education, 20*(2), 105-115.

Bruder, M. B. (2000b). Renewing the inclusion agenda: Attending to the right variables. *Journal of Early Intervention, 23*(4), 223-230.

Bruder, M. B. (2001). Infants and toddlers: Outcomes and ecology. In M. J. Guralnick (Ed.), *Early childhood inclusion: Focus on change* (pp. 203-228). Baltimore, MD: Paul H. Brookes Publishing Co.

Bruder, M. B. (2005). Service coordination and integration in a developmental systems approach to early intervention. In M. J. Guralnick (Ed.), *A developmental systems approach to early intervention: National and international perspectives* (pp. 29-58). Baltimore, MD: Brookes.

Bruder, M. B. (2010). Early childhood intervention: A promise to children and families for their future. *Exceptional Children, 76*(3), 339-355. doi: 10.1177/001440291007600306

Bruder, M. B. (2016). Personnel development practices in early childhood intervention. In B. Reichow, B. Boyd, E. E. Barton & S. L. Odom (Eds.), *Handbook of early childhood special education* (pp. 289-333). New York: Springer.

Bruder, M. B., & Dunst, C. J. (2006). Advancing the agenda of service coordination. *Journal of Early Intervention, 28*(3), 175-177. doi: 10.1177/105381510602800305

Bruder, M. B., Dunst, C. J., Mogro-Wilson, C., & Stayton, V. (2013). Predictors of confidence and competence among early childhood interventionists *Journal of Early Childhood Teacher Education, 34*(3), 249-267. doi: 10.1080/10901027.2013.816806

Bruder, M. B., Harbin, G. L., Whitbread, K., Conn-Powers, M., Roberts, R., Dunst, C. J., . . . Gabbard, G. (2005). Establishing outcomes for service coordination: A step toward evidence-based practice. *Topics in Early Childhood Special Education, 25*(3), 177-188. doi: 10.1177/02711214050250030501

Bruder, M. B., Lippman, C., & Bologna, T. M. (1994). Personnel preparation in early intervention: Building capacity for program expansion within institutions of higher education. *Journal of Early Intervention, 18*(1), 103-110.

Bruder, M. B., Mogro-Wilson, C. M., Stayton, V. D., & Dietrich, S. L. (2009). The national status of in-service professional development systems for early intervention and early childhood special education practitioners. *Infants and Young Children, 22*(1), 13-20. doi: 10.1097/01.IYC.0000343333.49775.f8

Carey, B. (2014). *How we learn: The surprising truth about when, where, and why it happens*. New York: Random House.

Catalino, T., Chiarello, L. A., Long, T., & Weaver, P. (2015). Promoting professional development for physical therapists in early intervention. *Infants and Young Children, 28*(2), 133-149. doi: 10.1097/IYC0000000000000034

Chang, F., Early, D. M., & Winton, P. J. (2005). Early childhood teacher preparation in special education at 2- and 4-year institutions of higher education. *Journal of Early Intervention, 27*(2), 110-124. doi: 10.1177/105381510502700206

Chen, C., & Mickelson, A. (2015). State licensure/certification requirements for personnel serving infants and young children with special needs and their families. *Infants and Young Children, 28*(4), 294-307. doi: 10.1097/IYC.0000000000000046

Colbeck, C. L., Cabrera, A. F., & Terenzini, P. T. (1999, November). *Learning professional competence and confidence: The link between instructional practices and learning gains for female and male students*, Paper presented at the Twenty-ninth Annual ASEE/IEEE Frontiers in Education Conference, San Juan, Puerto Rico.

Cook, B. G., & Odom, S. L. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children, 79*(2), 135-144. doi: 10.1177/001440291307900201

Couse, L. J., & Recchia, S. L. (2016). *Handbook of early childhood teacher education* New York: Routledge.

Cox, M. E., Hollingsworth, H., & Buysse, V. (2015). Exploring the professional development landscape: Summary from four states. *Early Childhood Research Quarterly, 32*, 116-126. doi: 10.1016/j.ecresq.2015.03.002

DEC. (2014). *DEC recommended practices in early intervention/early childhood special education 2014*. Retrieved from: http://www.dec-sped.org/recommendedpractice.

Delfin, P. E., & Roberts, M. C. (1980). Self-perceived confidence and competence as a function of training in the beginning graduate student in clinical psychology. *Teaching of Psychology, 7*, 168-171.

Dillman, D. A., Smyth, J. D., & Melani, L. (2008). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). New York: John Wiley and Sons.

Doolittle, S. A., Dodds, P., & Placek, J. H. (1993). Persistence of beliefs about teaching during formal training of preservice teachers. *Journal of Teaching in Physical Education, 12*, 355-365.

Druckman, D., & Bjork, R. A. (Eds.). (1994). *Learning, remembering, believing: Enhanced human performance*. Washington, DC: National Academy Press.

Duncan, J. R. (1980). CSPD: A critical ingredient for a free appropriate public education for the handicapped. *Teacher Education and Special Education, 3*(1), 11-14.

Dunne, L. F. (2002). Characterstics of unified and separate early childhood education and early childhood special education programs: A national study. *Teacher Education and Special Education, 25*(3), 219-235. doi: 10.1177/088840640202500303

Dunst, C. J. (2007). Early intervention with infants and toddlers with developmental disabilities. In S. L. Odom, R. H. Horner, M. Snell & J. Blacher (Eds.), *Handbook of developmental disabilities* (pp. 161-180). New York: Guilford Press.

Dunst, C. J. (2009). Implications of evidence-based practices for professional development in early childhood intervention. *Infants and Young Children, 22*(1), 44-53. doi: 10.1097/01.IYC.0000343336.34528.ea

Dunst, C. J. (2013). Guide for evaluating professional development: Opportunities in early childhood education. *The Early Childhood Educator, 28*(3), 7-9.

Dunst, C. J. (in preparation). A systhesis of research on leadership characteristics applicable for Early Childhood Systems.

Dunst, C. J., & Bruder, M. B. (2005). University faculty preparation of students in using natural environment practices with young children. *Psychological Reports, 96*, 239-242. doi: 10.2466/pe0.96.1.239-242

Dunst, C. J., & Bruder, M. B. (2006). Early intervention service coordination models and service coordinator practices. *Journal of Early Intervention, 28*(3), 155-165. doi: 10.1177/105381510602800301

Dunst, C. J., & Bruder, M. B. (2014). Preservice professional preparation and teachers' self-efficacy appraisals of natural environment and inclusion practices. *Teacher Education and Special Education, 37*(2), 121-132. doi: 10.1177/0888406413505873

Dunst, C. J., Bruder, M. B., & Hamby, D. W. (2015). Metasynthesis of inservice professional development research: Features associated with positive educator and student outcomes. *Educational Research and Reviews, 10*(12), 1731-1744.

Dunst, C. J., Trivette, C. M., Masiello, T., & McInerney, M. (2006). Scaling up early childhood intervention literacy learning practices. *CELLpapers, 1*(2), 1-10. Retrieved from http://www.earlyliteracylearning.org/newsite/cellpapers/cellpapers_v11_n12.pdf.

Fixsen, D. L., Blase, K. A., Metz, A., & Van Dyke, M. (2013). Statewide implementation of evidence-based programs. *Exceptional Children, 79*(2), 213-230. doi: 10.1177/001440291307900206

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Chapel Hill, NC: National Implementation Research Network.

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).

Fleet, A., & Patterson, C. (2001). Professional growth reconceptualized: Early childhood staff searching for meaning. *Early Childhood Research and Practice, 3*.

Fowler, F. F. (2008). *Survey research methods* (4th ed.). Thousand Oaks, CA: Sage Publications.

Frey, B. B., Lohmeier, J. H., Lee, S. W., & Tollefson, N. (2006). Measuring collaboration among grant partners. *American Journal of Evaluation, 27*(3), 383-392. doi: 10.1177/1098214006290356

Gallimore, R., Weisner, T. S., Bernheimer, L. P., Guthrie, D., & Nihira, K. (1993). Family responses to young children with developmental delays: Accommodation activity in ecological and cultural context. *American Journal on Mental Retardation, 98*, 185-206.

Gilles, C. A. (1980). The comprehensive system of personnel development. An evolutionary system. *Teacher Education and Special Education, 3*(1), 22-32.

Gomez, R. E., Kagan, S. L., & Fox, E. A. (2015). Professional development of the early childhood education teaching workforce in the United States: An overview. *Professional Development in Education, 41*(2), 169-186. doi: 10.1080/19415257.2014.986820

Guralnick, M. J. (1997). Second generation research in the field of early intervention. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 3-20). Baltimore, MD: Brookes.

Guralnick, M. J. (2001a). A developmental systems model for early intervention. *Infants and Young Children, 14*(2), 1-18.

Guralnick, M. J. (2005a). An overview of the developmental systems model for early intervention In M. J. Guralnick (Ed.), *The developmental systems approach to early intervention* (pp. 3-28). Baltimore, MD: Paul H. Brookes Publishing Company.

Guralnick, M. J. (Ed.). (1978). *Early intervention and the integration of handicapped and nonhandicapped preschool children*. Baltimore, MD: University Park Press.

Guralnick, M. J. (Ed.). (2001b). *Early childhood inclusion: Focus on change*. Baltimore, MD: Paul H. Brookes Publishing Co.

Guralnick, M. J. (Ed.). (2005b). *The developmental systems approach to early intervention: National and international perspectives*. Baltimore, MD: Paul H. Brookes Publishing Co.

Guralnick, M. J., & Bruder, M. B. (2016). Early childhood inclusion in the United States: Current status and future directions. *Infants and Young Children, 29*(3), 166-177.

Guskey, T. R. (2000). *Evaluating professional development*. Thousand Oaks, CA: Corwin.

Guskey, T. R. (2001). The backward approach. *Journal of Staff Development, 22*(3), 60.

Guskey, T. R. (2014). Planning professional learning. *Educational Leadership, 71*(8), 10-16.

Halle, T., Metz, A., & Martinez-Beck, I. (Eds.). (2013). *Applying implementation science in early childhood programs and systems*. Baltimore, MD: Brookes.

Hill, P., & Olds, D. (2013). Improving implementation of the nurse-family partnership in the process of going to scale. In T. Halle, A. Metz & I. Martinez-Beck (Eds.), *Applying implementation science in early childhood programs and systems* (pp. 193-207). Baltimore, MD: Brookes.

Horm, D. M., Hyson, M., & Winton, P. J. (2013). Research on early childhood teacher education: Evidence from three domains and recommendations for moving forward. *Journal of Early Childhood Teacher Education, 34*(1), 95-112. doi: 10.1080/10901027.2013.758541

Hyson, M., Horm, D. M., & Winton, P. J. (2012). Higher education for early childhood educators and outcomes for young children: Pathways toward greater effectiveness. In R. Pianta, L. Justice, S. Barnett & S. Sheriden (Eds.), *Handbook of early education* (pp. 553-583). New York: Guildford Press.

Ingvarson, L., Meiers, M., & Beavis, A. (2005). Factors affecting the impact of professional development programs on teachers' knowledge, practice, student outcomes and efficacy. *Education Policy Analysis Archives, 13*(10), 1-28.

Jarvis, T., & Pell, A. (2004). Primary teachers' changing attitudes and cognition during a two-year science in-service programme and their effect on pupils. *International Journal of Science Education, 26*, 1787-1811.

Kagan, S. L., & Kauerz, K. (2012). *Early childhood systems: Transforming early learning*. New York: Teachers College Press.

Katz, J. S. (2015). *What do we know about technical assistance? Enhancing the science and practice of technical assistance via a research synthesis*. (Doctoral dissertation). Retrieved from http://scholarcommons,sc.edu/etd/3164.

Khamis, M. (1995, November). *A profile of teacher competence: Does practice make a difference?*, Paper presented at the Australian Association for Research in Education Conference, Hobart, Tasmania.

Klingner, J. K., Boardman, A. G., & McMaster, K. L. (2013). What does it take to scale up and sustain evidence-based practice? *Exceptional Children, 79*(2), 195-211. doi: 10.1177/001440291307900205

Krueger, R. A., & Casey, M. (2015). *Focus Groups: A practical guide for applied research* (5th ed.). Thousand Oaks, CA: Sage.

Lamorey, S., & Wilcox, M. J. (2005). Early intervention practitioners' self-efficacy: A measure and its applications. *Early Childhood Research Quarterly, 20*, 69-84.

Lang, J. M. (2016). *Small thinking: Everyday lessons from the science of learning*. San Francisco: Jossey-Bass.

Lewis, L., Parsad, B., Carey, N., Bartfai, N., Farris, E., Smerdon, B., & Greene, B. (1999). Teacher quality: A report on the preparation and qualifications of public school teachers. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Lu, X. (2005). Teacher quality and teacher preparedness in secondary public schools: Evidence from SASS 1999-2000. *Dissertation Abstracts International: Section A: Humanities and Social Sciences, 66*(12), 4343.

Maude, S., Dunst, C. J., & Bruder, M. B. (in preparation). A portrait of one state's capacity to use the DEC Recommended Practices when delivering early childhood services intervention to young children with disabilities.

McIntosh, K., Filter, K. J., Bennett, J., Ryan, C., & Sugai, G. (2010). Principles of sustainable prevention: Designing scale-up of school-wide positive behavior support to promote durable systems. *Psychology in the Schools, 47*, 5-21.

Metz, A., Naoom, S. F., Halle, T., & Bartley, L. (2015). *An integrated stage-based framework for implementation of early childhood programs and systems (OPRE Research Brief OPRE 201548)*. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Meyers, D. C., Durlak, J. A., & Wandersman, A. (2012). The quality implementation framework: A synthesis of critical steps in the implementation process. *American Journal of Community Psychology, 50*(3-4), 462-480. doi: 10.1007/s10464-012-9522-x

Miller, P. S., & Stayton, V. D. (1998). Blended interdisciplinary teacher preparation in early education and intervention: A national study. *Topics in Early Childhood Special Education, 18*(1), 49-58. doi: 10.1177/027112149801800108

Muhlenhaupt, M., Pizur-Barnekow, K., Schefkind, S., Chandler, B., & Harvison, N. (2015). Occupational therapy contributions in early intervention: Implications for personnel preparation and interprofessional practice. *Infants and Young Children, 28*(2), 123-131. doi: 10.1097/IYC0000000000000031

NAEYC, & NACCRRA. (2011). *Early childhood education professional development: Training and technical assistance glossary*. Washington, DC: NAEYC.

NECTAC. (2000). State personnel systems under the IDEA: Comprehensive systems of personnel development and state personnel development grants. Retrieved from http://www.nectac.org/topics/personnel/systems.asp.

Nichols, T. (2017). *The death of expertise: The campaign against established knowledge and why it matters*. New York: Oxford University Press.

Odom, S. L. (2009). The tie that binds: Evidence-based practice, implementation science, and outcomes for children. *Topics in Early Childhood Special Education, 29*(1), 53-61. doi: 10.1177/0271121408329171

Odom, S. L., Cox, A. W., Brock, M. E., & the National Professional Development Center on Autism Spectrum Disorders. (2013). Implementation science, professional development,

and autism spectrum disorders. *Exceptional Children*, *79*(2), 233-251. doi: 10.1177/001440291307900207

Paine, S. C., & Bellamy, G. T. (1982). From innovation to standard practice: Developing and disseminating behavioral procedures. *The Behavior Analyst, 5*(1), 29-43.

Paine, S. C., Bellamy, G. T., & Wilcox, B. (1984). *Human services that work: From innovation to standard practice*. Baltimore, MD: Brookes.

Pajares, F. (1997). Current directions in self-efficacy research. In M. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 1-49). Greenwich, CT: JAI.

Patton, M. Q. (2014). Qualitative inquiry in utilization-focused evaluation. In L. Goodyear, J. Jewiss, J. Usinger & E. Barela (Eds.), *Qualitative inquiry in evaluation: From theory to practice* (pp. 25-54). San Francisco, CA: Jossey-Bass.

Prelock, P. A., & Deppe, J. (2015). Speech-language pathology: Preparing early interventionists. *Infants and Young Children, 28*(2), 150-164. doi: 10.1097/IYC0000000000000035

Ray, A., Bowman, B., & Robbins, J. (2006). *Preparing early childhood teachers to successfully educate all children: The contribution of four-year undergraduate teacher preparation programs*. Chicago, IL: Erikson Institute.

Raybould, B. (2000). *Performance support engineering part one: Key concepts*. Cincinnati, OH: Ariel PSE Technology.

Riffle, C., & Smith-Davis, J. (1991). *Planned change for personnel development: Strategic planning and the CSPD Mid-South Regional Resource Center*. Lexington, KY: Special Education Programs (ED/OSERS) National Clearinghouse.

Rimm-Kaufman, S. E., & Sawyer, B. E. (2004). Primary-grade teachers' self-efficacy beliefs, attitudes toward teaching, and discipline and teaching practice priorities in relation to the responsive classroom approach. *Elementary School Journal, 104*, 322-341.

Sameroff, A. (2010). A unified theory of development: A dialectic integration of nature and nurture. *Child Development, 81*(1), 6-22. doi: 10.1111/j.1467-8624.2009.01378.x

Sarama, J., & Clements, D. H. (2013). Lessons learned in the implementation of the TRIAD scale-up model: Teaching early mathematics with trajectories and technologies. In T. Halle, A. Metz & I. Martinez-Beck (Eds.), *Applying implementation science in early childhood programs and systems* (pp. 173-191). Baltimore, MD: Brookes.

Shonkoff, J. P. (2010). Building a new biodevelopmental framework to guide the future of early childhood policy. *Child Development, 81*(1), 357-367. doi: 10.1111/j.1467-8624.2009.01399.x

Simmons, R., & Shiffman, J. (2006). Scaling-up health service innovations: A framework for action. In R. Simmons, P. Fajans & L. Ghiron (Eds.), *Scaling-up health delivery: From pilot innovations to policies and programmes*. Geneva, Switzerland: World Health Organization.

Smith-Davis, J., Burke, P. J., & Noel, M. M. (1984). *Personnel to educate the handicapped in America: Supply and demand from a programmatic viewpoint*. College Park, MD: University of Maryland Institute for the Study of Exceptional Children and Youth. Available at http://files.eric.ed.gov/fulltext/ED244428.pdf.

Snell, M. E., Doswell-Forston, L., Stanton-Chapman, T. L., & Walker, V. L. (2013). A review of 20 years of research on professional development interventions for preschool teachers and staff. *Early Child Development and Care, 183*(7), 857-873. doi: 10.1080/03004430.2012.702112

Snyder, P., Hemmeter, M. L., & McLaughlin, T. (2011). Professional development in early childhood intervention: Where we stand on the Silver Anniversary of PL99-457. *Journal of Early Intervention, 33*(4), 357-370. doi: 10.1177/1053815111428336

Snyder, P., Hemmeter, M. L., Meeker, K. A., Kinder, K., Pasia, C., & McLaughlin, T. (2012). Characterizing key features of the early childhood professional development literature. *Infants and Young Children, 25*(3), 188-212. doi: 10.1097/IYC.0b013e31825a1ebf

Stayton, V. D. (2015). Preparation of early childhood special educators for inclusive and interdisciplinary settings. *Infants and Young Children, 28*(2), 113-122. doi: 10.1097/IYC0000000000000030

Stayton, V. D., Dietrich, S. L., Smith, B. J., Bruder, M. B., Mogro-Wilson, C., & Swigart, A. (2009). State certification requirements for early childhood special educators. *Infants and Young Children, 22*(1), 4-12. doi: 10.1097/01.IYC.0000343332.42151.cd

Stayton, V. D., Smith, B. J., Dietrich, S. L., & Bruder, M. B. (2012). Comparison of state certification and professional association personnel standards in early childhood special education. *Topics in Early Childhood Special Education, 32*(1), 24-37. doi: 10.1177/0271121411436086

Stephenson, J. (1992). Capability and quality in higher education. In J. Stephenson & S. Weil (Eds.), *Quality in higher education: A capability approach in higher education* (pp. 1-14). London: Kogen Page.

Strain, P. (in press). Personal thoughts on early childhood special education research: An historical perspective, threats to relevance and call to action. *Journal of Early Intervention.*

Striffler, N., & Fire, N. (1999). Embedding personnel development into early intervention service delivery: Elements in the process. *Infants and Young Children, 11*(3), 50-61. doi: 10.1097/00001163-199901000-00009

Sugai, G., Horner, R. H., Algozzine, R., Barrett, S., Lewis, T., Anderson, C., . . . Simonsen, B. (2010). *School-wide positive behavior support: Implementers' blueprint and self-assessment*. Eugene, OR: University of Oregon.

Sugai, G., Horner, R. H., Fixsen, D. L., & Blase, K. A. (2010). Developing systems-level capacity for response to intervention implementation: Current efforts and future directions. In T. A. Glover & S. Vaughn (Eds.), *Response to intervention: Empowering all students to learn - a critical account of the science and practice* (pp. 286-309). New York: Guildford.

Sugawara, A. I., Ruder, T. P., & Burt, L. M. (1998). Relationships between teaching self-efficacy, work environment autonomy, and teacher competency among early childhood preservice teachers. *Journal of Early Childhood Teacher Education, 19*, 3-8.

Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*, 944-956.

U.S. Department of Education. (2015). *A matter of equity: Preschool in America*. Washington, DC: Author. Available at http://www2.ed.gov/documents/early-learning/matter-equity-preschool-america.pdf.

U.S. Department of Education Office of Special Education and Rehabilitative Services Office of Special Education Programs. (2014). 36th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, Parts B and C, 2014. Washington, DC.

U.S. Department of Health and Human Services, U. S. D. o. E. (2015). Policy statement on inclusion of children with disabilities in early childhood programs. *Infants & Young Children, 29*(1), 1-21. doi: http://dx.doi.org/10.1097/ITC0000000000000054

Wesley, P. W., & Buysse, V. (2004). Consultation as a framework for productive collaboration in early intervention. *Journal of Educational and Psychological Consultation, 15,* 127-150.

Winer, A., Hebbeler, K., Nelson, R., Gundler, D., Cate, D., Hudson, L., . . . Peters, M. L. (2015). *Critical questions about early intervention and early childhood special education*. Menlo Park CA: SRI International.

Winton, P., Snyder, P., & Goffin, S. G. (2016). Beyond the status quo: Rethinking professional development for early childhood teachers. In L. Couse & S. Recchia (Eds.), *Handbook of early childhood teacher education* (pp. 54-68). New York: Routledge.

Woods, J. J., & Snyder, P. (2009). Interdisciplinary doctoral leadership training in early intervention: Considerations for research and practice in the 21st century. *Infants and Young Children, 22*(1), 32-43. doi: 10.1097/01.IYC.0000343335.26904.db

Yazejian, N., Bryant, D., & Kennel, P. (2013). Implementation and replication of the educare model of early childhood education. In T. Halle, A. Metz & I. Martinez-Beck (Eds.), *Applying implementation science in early childhood programs and systems* (pp. 209-225). Baltimore, MD: Brookes.

Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M. R., Espinoza, L. M., Gormley, W. T., . . . Zaslow, M. J. (2013). *Investing in our future: The evidence base for preschool education*. New York, NY: Foundation for Child Development. Available at: fcd-us.org/sites/default/files/Evidence Base on Preschool Education FINAL.pdf

Zaslow, M. (2009). Strengthening the conceptualization of early childhood professional development initiatives and evaluations. *Early Education and Development, 20*, 1-10. doi: 10.1080/10409280902908833

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology, 25*, 82-91.