

*Enhancing Quality in Teacher Preparation in Mathematics within Urban Partnerships*

**A. Quality of Project Services**

**A.1. The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.**

The proposed project is designed to recruit, prepare, and sustain highly-effective teachers with specific foci in mathematics and disciplinary literacy to teach and differentiate instruction for students with diverse learning needs in High-Need Schools (HNS). General and special education faculty from the University of Central Florida (UCF), administrators and staff from the Orange County School District (OCPS-with 204,837 students and a 49.92% poverty rate), national and state partners collaboratively propose to dramatically alter the ways in which teachers are developed and sustained throughout their professional careers by co-constructing, implementing, researching, and disseminating an **Enhanced Partnership Model** . Ongoing collaborative efforts will ensure project services are personalized, job-embedded, and practice-changing for prospective teachers, supervising teachers, instructional coaches (OCPS), and Professors in Residence (UCF).

National, state, university, and school district personnel will serve on Curriculum Committees, called Technical Work Groups (e.g., Culturally Responsive Teaching; Mental Health/Counseling; Professional Learning/Coaching; Mathematics; Disciplinary Literacy; and Interventions) (See CVs and listing of Key Personnel and Consultants-Appendix H ) and will meet bi-monthly to co-plan courses, share resources, and review formative evaluation metrics to align content, co-construct shared coursework, performance tasks, coordinated clinical experiences, and induction. Attendance by key project personnel at cross-site learning opportunities organized by national partners (e.g., webinars, briefings) will build capacity of participants; increase the impact of funding; and innovate interdisciplinary programming across school sites. In addition,

development of this **Enhanced Partnership Model** will build upon and enhance current collaborative, grant-funded initiatives (e.g., the National Urban Special Education Leadership Initiative-OSEP; Inclusive Teacher Preparation, Center on Collaboration for Effective Educator Development, Accountability, and Reform-CEEDAR; Intensive Interventions project in Mathematics and Literacy-OSEP, etc.); course content in inclusive education, licensure, certification, and endorsement requirements (Florida Department of Education-FDOE); and address the Florida curriculum standards and instructional initiatives and foci of the local education agency (LEA), Orange County School District (OCPS), ninth largest in the US.

Given the co-construction, collaboration, and commitment of the educational partners of this proposal, the likelihood of sustainability after the project ends is high. This project incorporates an intentional collaboration across educational partners, includes sustainability and scale-up plan beginning in year 3 and involves reporting, publishing and dissemination of products and knowledge across multiple state and national venues. Additionally, the predominant number of diverse faculty included in this program are UCF and OCPS employees who are already involved, as identified by their ongoing assignments to course work and supervision in urban HNS. Further, the Deans of the College of Community Innovation and Education (CCEI) and College of Sciences (COS) support this proposal as enhancements to the programs, certifications, and endorsements currently established in the Colleges and will continue to be offered. Currently, 100% of prospective teachers are fully certified before graduation. This project will benefit from the established components of these programs. Further, Central Florida is a rapidly growing, diverse urban area with positive opportunities for a variety of learning experiences and rich in supportive resources to address learning needs. All of these factors make study in the proposed program highly desirable. Strategies and resources, especially addressing mathematics and disciplinary

literacy, while addressing the social/emotional needs of the “whole child”, assure sustainability by leveraging and matching resources at UCF and OCPS. (See Appendix I-Letters of Support).

**A.2. The extent to which the services to be provided by the proposed project reflect relevant and effective teaching practices.**

The proposed project is designed to develop, pilot, and rigorously evaluate a redesigned, scalable model of continuous learning to both improve subject matter knowledge, pedagogical content knowledge, classroom implementation, and assessment data use for differentiation in mathematics (*CPP#1*) and disciplinary literacy; and to obtain applicable state licenses and/or endorsements by educators at various stages of their professional careers. Teams of educators at each of the identified HNS sites will include: prospective teachers (initial certification and licensure); supervising teachers (additional state endorsements); instructional coaches (state endorsement in coaching); and university professors (applied research and scholarship). Content modules will explicitly meet competencies to assure certification and licensure requirements using multiple modes of delivery (face-to-face, school-site, and electronic). At the project outset, key personnel (See CVs and listing of Key Personnel and Consultants-Appendix H) will co-construct learning modules in *mathematics, interventions, culturally responsive teaching, disciplinary literacy, social-emotional learning/mental health, and instructional coaching* from evidence-based practices reviewed by the What Works Clearinghouse. The resulting content will meet university course content, district professional development inservice requirements, and applicable state requirements (certification and licensure) to address individual educator needs.

The program of study focuses on practices, programs, and resources with strong empirical basis to understand effective instructional strategies across all applicable content areas (mathematics and disciplinary literacy) to teach students in HNS; of effectively use strong teaching

skills, specifically culturally responsive teaching practices, technology, and interventions to meet and accommodate the needs of all students, including English Learners (ELs) and students with disabilities (SWDs) within inclusive classrooms (ESSA, 2015). In addition, the content will incorporate knowledge and skills to analyze and use student academic achievement data and other measures of student learning to differentiate instruction for each student to meet individual, diverse learning needs. The knowledge and skills not only improve student learning but also provide important assessment and instructional data for teachers to effectively participate as members of the school-based educational teams (e.g., multi-tier system of support [MTSS as in ESSA, 2016]), as well as of the individualized education program team, as defined in section (d)(1)(B) of the Individuals with Disabilities Education Act (IDEA, 2004). The program includes current mathematics curriculum standards (NCTM, 2006; RAND, 2013) focused on high-level conceptual understanding, problem solving, and disciplinary literacy (NRC, 2009). Emerging research of evidence-based instructional programs and practices have been identified (e.g., WWC Effective Practices). Teaching practices such as frequent group work among students for opportunities to talk about mathematics, use of various mathematical tools (e.g., manipulatives), and creating algorithms to solve problems will be highlighted. In addition to developing fluency in these instructional strategies, teachers will also learn how to effectively differentiate them for students who struggle (Bryant, Bryant & Pfannenstiel, 2015). A specific focus in mathematics will be the Algebraic Thinking strand in the Florida standards, with standards which span from kindergarten through grade 9 (until successful passage of the Florida State Assessment-FSA in Algebra). Although algebraic reasoning is an integral strand throughout the grades (CCSSO, 2010) and often is a gate-keeper for successful high school graduation, many students are unprepared for algebra courses often due to poor foundational conceptual understanding in elementary school (NMAP, 2008). The

core principles of standards-based mathematics curricula and instruction must emphasize “active student engagement, a focus on problem solving, and making connections of content in strands in mathematics with real life contexts” (Tarr et al, 2008, p. 248). Another critical component of learning and mastering rigorous mathematics is also disciplinary literacy rather than only procedural knowledge and rule-driven computation (NRC, 2009). Disciplinary literacy focuses on teaching students the differences among the various texts used in different disciplines and the specialized reading practices required for comprehension and critical analysis of ideas (Zycouris-Coe, 2017). Some of these differences include specialized vocabulary, types of language used to communicate ideas, text features and descriptions (e.g., boldface headings and vocabulary, diagrams, charts, photographs, captions), and sources of information within and across disciplines. Disciplinary literacy teaches students to move beyond the use of general reading strategies toward the use of specialized reading practices for making sense of the unique texts found within each discipline. Each discipline represents knowledge and the ways of producing and communicating that knowledge differently, resulting in a different approaches to reading, to differentiate and to teach to individual, diverse learning needs (e.g., WWC Effective Practices).

Another significant component to enhance understanding and promoting strong teaching skills by teachers deals with the social context in which learning occurs. Cochran, DeRuiter & King (2013) infer that teaching for understanding and use are enhanced if they are acquired in contexts that resemble those in which they will be using their knowledge – specifically a classroom context. Prospective and current teachers gain valuable insights into the learning and teaching of academic content (e.g., mathematics) in authentic classroom environments (Kazemi & Stipek, 2001). Given the greatest needs for highly effective teachers are in the schools and classrooms with greatest diversity (USDOE, 2015), implementation of EBPs will focus initially within the authentic

classrooms of urban HNS settings from elementary through high school in the “threaded” feeder pattern (HNS in OCPS student attendance area schools from K-12-See listing in Appendix J).

However, the demographics of the students within the selected urban HNS are often very different from prospective teachers (See Appendix C-Needs Assessment). The overwhelming majority of students from diverse and/or low-income backgrounds attend high-poverty, low-performing schools where educational consideration and decision-making are not centered around race, ethnicity, culture, language, or disability, despite the high levels of diversity of each of these factors among the students (Blanchett, Klingner, & Harry, 2009). A number of factors, including inadequate teacher preparation or poor quality of teaching (Darling-Hammond, 2010) are challenging issues in high poverty, high minority areas. Further, teachers report limited interaction with students from diverse backgrounds in their preservice practicum experiences and perceive themselves to be ill-prepared to address the needs of diverse populations (Barrio, Lindo, Combes & Hovey, 2015). Hence, the need to recruit increased numbers of diverse prospective teachers and prepare teachers to meet the needs of diverse students, specifically in HNS, with culturally responsive teaching practices and social/emotional methods is of the utmost importance (Ladson-Billings, 2001). According to research, teaching that ignores student norms of behavior and communication provokes student resistance, while teaching that is responsive prompts student involvement (Noguera, 2015). There is growing evidence that strong, continual engagement among diverse students requires a holistic approach—that is, an approach where the how, what, and why of teaching are unified and meaningful (Ogbu 1995; Rios, 2017). In addition, studies have estimated that about 20% of the US populations are affected by a mental disorder, with first onset usually in childhood or adolescence (Kessler, 2005). A growing body of evidence indicates that the more time an individual spends living in a distressed community, especially during childhood, the

worse are that individual's lifetime chances of achieving economic stability or success (Economic Innovation Group, 2016). Educators need the knowledge and skills to identify early warning signs and advocate for the necessary mental health services (FDOE, 2018).

Not only is there a critical need for teachers to initially learn and implementing evidence-based practices that meet the rigorous standards in content within authentic classroom contexts, but also there is a need for sustained, professional learning for educators to continuously improve teaching skills to effectively teach all students, including students with diverse backgrounds, disabilities, and diverse learning needs in HNS. School-based implementation teams, composed of UCF prospective teachers, OCPS supervising teachers, UCF Professors in Residence, and OCPS Instructional Coaches will meet collaboratively as )

UCF Professors in Residence and OCPS Instructional Coaches will support high-quality implementation of EBPs by supervising teachers and prospective teachers, preparing participants with vital knowledge and expertise (Benedict et al., 2016) to demonstrate competencies to meet professional and state certification and licensure requirements and district priorities.

There is a need to create and rigorously evaluate comprehensive systems of professional learning (Antoniou, 2013) that build significant and sustained connections among researchers, practitioners, and policy makers to guide both the knowledge production and knowledge utilization enterprise (Allsopp, Lovin, van Ingen, 2017). Partnerships between local education agencies (LEAs), universities, state education agencies (SEA), and national researchers and federally-funded Centers is proposed as a mechanism to recruit and retain teachers, as well as reduce the research to practice gap in instructional strategies and evidence-based practices (DeMonte, Holdheide, &

Sindelar, 2016) to recruit and retain educators who are effective and increase diversity and from other careers, including but not limited to racial and ethnic diversity. (*CPP#2*).

**A.3. The extent to which services to be provided are of high quality and effective in improving student outcomes.**

The overarching goal of this project is to increase knowledge of rigorous mathematics, engagement, and outcomes in mathematics for students with diverse learning needs in HNS. The complex challenges of high levels of poverty and diversity among students present in many HNS can lead to higher levels of disengagement, placing students at greater risk of dropout, leading to only one in ten of kindergarteners entering college (Blanchett, Klingner, & Harry, 2009; Darling-Hammond, 2010). Students from culturally and linguistically diverse (CLD) backgrounds and students with disabilities (SWDs) are at greater risk for poor academic outcomes (See Appendix C-Needs Assessment from OCPS). In fact, African American students are twice as likely as their White peers to drop out of school; Hispanic students are two and a half times as likely to drop out; and students with disabilities (SWDs) are twice as likely to drop out than their peers without disabilities (Chapman, Laird, Ifill, & KewalRamani, 2011). As mentioned, teachers report limited interaction with students from diverse backgrounds in their preparation experiences and perceive themselves to be ill-prepared to address the needs of diverse populations (Barrio, Lindo, Combes & Hovey, 2015). This lack of preparation is reflected in high turn-over rates (more than 20% annually) in high-need schools (HNS) (NCIPP, 2013). However, on a more positive note, Billingsley and colleagues (2009) found teachers with higher levels of induction support reported greater job manageability and increased success with diverse students, such as SWDs and CLD students. Hence, the need to prepare and support teachers throughout their professional careers



to learn and enhance knowledge to meet the needs of diverse students with culturally responsive teaching and social/emotional methods is of the utmost importance (Ladson-Billings, 2001).

The proposed project will address the need to better prepare teachers to transform content knowledge into pedagogically powerful instruction to meet student abilities and backgrounds (Desimone, Porter, Garet, Yoon, & Birman, 2002) by providing authentic clinical experiences for prospective teachers in HNS (Barrio, Lindo, Combes & Hovey, 2015). Job-embedded professional learning and mentoring that is sustained, intensive and content focused has been shown to increase student achievement by 21 percentile points (Weber, Tallman & Middleton, 2015). Consequently, collaboration across partners, shared project resources, and sustained professional development from initial preparation and certification through induction to advanced endorsements and certifications and a comprehensive formative assessment and feedback system will focus on identified needs and goals. Implementation to assure improved outcomes for students with diverse learning needs, including students with disabilities (SWDs) and English Learners (ELs), necessitate ongoing professional development, coaching, and mentoring through classroom instruction and data collection. Therefore, each member of the content sub-committees will continuously be informed by formative assessments, observations, and feedback from on-site UCF Professors in Residence/OCPS Instructional Coaches throughout the project for program accountability, enhanced reforms, and enhanced professional learning, mentorship, an support through a year-long clinical experiences and an induction period of two years.

**B.1. The extent to which the proposed project demonstrates a rationale.**

**Gap 1: There is a need to recruit and develop teachers with diverse backgrounds.** Currently, there is a chronic teacher shortage in mathematics and special education that greatly hinders student achievement (USDOE, 2015). In addition to teacher shortages, there are additional concerns about teacher demographics which have not kept up with student demographics, as 69% of teachers in comparison to 43% of students, are identified as white, non-Hispanic in 2015-2016. Nationally, there is less than 2% of current teachers that are African-American males (USDOE, 2015). In examining this disparity in diversity, future projections show that by 2025 “minority” students will be the majority, although teachers tend to remain female and White (Ingersoll, 2012). Concerns that the needs of culturally and linguistically diverse (CLD) students are not met (Blanchett, Klingner, & Harry, 2009). A number of factors, including inadequate teacher preparation in working with students with diverse needs, poor quality of teaching (Darling-Hammond, 2004) and insufficiently funded or resourced schools (Blanchett, et al., 2009) are challenging issues in HNS. Even though the student population is more diverse, many teachers report limited interaction in preparation programs with diverse students and perceive themselves to be ill-prepared to address the needs of diverse populations. Teachers are often not prepared for the cultural complexities of diverse communities (Jackson & McCrae, 2016).

These complex challenges present in many HNS can lead to higher levels of disengagement, placing students at greater risk of dropout, leading to only one in ten of kindergarteners entering college (Darling-Hammond, 2010). CLD students and students with disabilities (SWDs) are at greater risk for poor academic outcomes. In fact, African American students are twice as likely as their White peers to drop out of school; Hispanic students are two and a half times as likely to drop out; and students with disabilities (SWDs) are twice as likely to drop out than their nondisabled peers (Chapman, Laird, Ifill, & KewalRamani, 2011). Recent research shows that

students with teachers of the same culture, background, etc. even for one grade are much more likely to graduate (USDOE, 2015). Hence, the need to prepare diverse teachers to teach diverse students, specifically in HNS, with culturally responsive teaching and social/emotional methods is of the utmost importance nationally (Ladson-Billings, 2001) and at UCF (See Appendix C.).

Academic proficiency in mathematics is a critical need nationally and especially in HNS. The problems surface early and the gap in academic performance often continues among students with diverse learning needs throughout their education (Steffe, Liss & Lee, 2014). A persistent performance gap in mathematics between students with diverse learning needs continues (See above.) Students who have consistently struggled in calculation and word problems have more severe deficits in each domain (e.g., Bryant & Bryant, 2017) and experience more pervasive challenges on other mathematical competencies, such as algebraic thinking (Accardo & Kuder, 2017). This lack of knowledge in advanced mathematics, including advanced placement (AP) and International Baccalaureate (IB), and disciplinary literacy is problematic and often negatively affects high school graduation requirements (NCES, 2015). Clearly, there is a need for highly effective teachers in academic content to narrow and close the gap for students with diverse needs (*CPP#2*). Currently, 70% of our prospective teachers pass the Florida Teacher Certification Examination-Mathematics subtest prior to Internship II.

IMPACT: The project will address the rationale with: (a) a multi-faceted recruitment model to increase the diversity and quality of educators (prospective teachers, supervising teachers, instructional coaches) within High-Needs Schools (HNS), revise program entrance requirements and enhance academic support to assure applicants meet requirements, as needed.

***Gap 2: There is a need to develop, pilot, provide, and rigorously evaluate professional development for prospective and supervising teachers comprising evidence-based practices and***

*job-embedded experiences that meet the What Works Clearinghouse (WWC) standards will: (a.) Produce credentialed, highly effective, beginning teachers, as evidenced by state certifications and receipt of the highest possible effectiveness rating in mathematics and teaching evaluations; (b.) Enhance the knowledge and teaching processes of both prospective and supervising teachers in EBPs in mathematics, disciplinary literacy, and differentiation based upon assessment data; and (c) Improve mastery of rigorous academic standards in mathematics by students in HNS.*

Algebra represents a gateway to more advanced mathematics (National Mathematics Advisory Panel, 2008) in high school and post-secondary settings and successful participation in the U.S. workforce. Student achievement in mathematics suggests that the performance of U.S. students relative to their peers in other countries continues to decline (e.g., NCES, 2015). In addition, despite the reform efforts and achievements of the past decade, the quality of education and academic achievement in mathematics for students in many urban schools are inferior to schools in middle-class neighborhoods (Taines, 2012). Current OCPS assessment results report 72.4% of students achieved “at expectation” for all students, but only 45.5% of students “economically disadvantaged” achieved “at expectation” (FDOE, 2017) (See Appendix C.).

Current mathematics curriculum standards (NCTM, 2006; RAND, 2013) focus on high-level conceptual understanding, problem solving, and disciplinary literacy rather than procedural knowledge and rule-driven computation (NRC, 2009). The core principles of standards-based mathematics curricula and instruction include “active student engagement, a focus on problem solving, and making connections of content in strands in mathematics with real life contexts” (Tarr et al, 2008, p. 248). Standards-based curricula and instruction include frequent group work among students for opportunities to talk about mathematics, use various mathematical tools (e.g., manipulatives), and create algorithms to solve problems. Also, disciplinary literacy focuses on

teaching students the specialized reading practices required for comprehension and critical analysis of ideas, concepts, and rigorous content of algebraic thinking in mathematics. Some of these differences include specialized vocabulary, types of language used to communicate ideas, text features and descriptions (e.g., boldface headings and vocabulary, diagrams, charts, photographs, captions), and sources of information within mathematics (Zycouris-Coe, 2017).

Algebraic reasoning is an integral strand throughout the grades (CCSSO, 2010) with many students unprepared for algebra courses often due to poor foundational conceptual understanding in elementary school (NMAP, 2008). *Even though the focus of mathematics standards has shifted, many educators often rely on teaching practices based upon how they were taught. Additionally, current educators often report a gap in understanding mathematics conceptually and struggle in teaching to the breadth and depth essential for long-term success. This proposal utilizes a school-based, interdisciplinary approach for learning, teaching, and increasing mastery of mathematics.*

Not only is there a critical need for teachers learning and implementing evidence-based practices that meet the rigorous standards in mathematics, but also there is a need for sustained, professional learning for educators to learn, implement, use assessment data, and continuously improve pedagogical skills to effectively teach all students, including students with diverse backgrounds in HNS. Many teachers are not fluent in these instructional strategies, they also struggle to effectively differentiate them for students who struggle. Some of the instructional procedures necessary to master the standards-based curricula may not meet the learning needs for students who struggle in mathematics (Bryant, Bryant & Pfannenstiel, 2015). Emerging research and meta-analyses of evidence-based instructional programs and practices have been identified (e.g., WWC Effective Practices). However, current OCPS assessment results report 72.4% of students achieved “at expectation” for all students, but only 21.3% of students with disabilities achieved “at expectation” and 33.8% of English Learner (EL) students achieved “at expectation” (FDOE, 2017).

Another significant component to enhance understanding by teachers deals with the social context in which learning occurs. Cochran, DeRuiter & King (1993) infer that teaching for understanding and teachers' abilities are enhanced if they are acquired in contexts that resemble those in which they will be using their knowledge – specifically a classroom context. Prospective teachers gain valuable insights about teaching mathematics in authentic classroom environment (Kazemi & Stipek, 2001). There is a need to create and rigorously evaluate comprehensive systems of professional learning (Antoniou, 2013) that build significant and sustained connections among researchers, practitioners, and policy makers to guide both the knowledge production and knowledge utilization enterprise (Allsopp, Lovin, van Ingen, 2017). Partnerships between local education agencies (LEAs) and enhanced university preparation programs, including Colleges of Education and Science-Mathematics, are needed develop teachers, as well as reduce the research to practice gap in instructional strategies and evidence-based practices to meet the learning needs of diverse students, including social/emotional (DeMonte, Holdheide, & Sindelar, 2016). *(CPP#1)*. IMPACT: The overarching goal of this project is to develop, pilot, implement, rigorously evaluate, and disseminate an **Enhanced Partnership Model** focused on the knowledge, skills, and classroom implementation of evidence-based instruction and interventions in mathematics and disciplinary literacy by both prospective and supervising teachers that improve mastery of rigorous academic standards in mathematics by students with diverse learning needs in HNS.

*Gap 3: There is a need to support highly-effective teachers of diverse students in high-needs schools through enhanced clinical experiences, induction and mentorship, while rigorously evaluating and disseminating a scalable, redesigned model of continuous improvement and support in mathematics.* According to the National Commission on Teaching and America's

Future (NCTAF) (2009), the cost of teacher turnover is substantial, ranging from \$4,000 to \$15,000

per teacher (dependent on location in US) for recruiting, hiring, and developing a replacement teacher. In addition to school and district expense is the cost of student achievement; research clearly shows the negative impact of teacher turnover on student achievement (Ronfeldt, Loeb & Wyckoff, 2013). NCTAF recommends investing in new teacher support and development of mentoring through comprehensive, inclusive induction programs to address teacher turnover. The necessity and value of retention programs are clear (Alliance for Excellent Education, 2008). Mentorship reduces teacher attrition by increasing early educator's satisfaction with their careers, as well as their self-confidence (Gutke & Albion, 2008). Personal guidance through orientations, standards-based feedback and reflection, monthly seminars, and professional learning communities focus on content related specifically to teaching demands (Little, Hunt, & Powell, 2013). Whether face-to-face or online mentoring methods are used, there is clear evidence to suggest that professional communities provide much needed support to teaching neophytes (Billingsley, Griffin, Smith, Kamman, & Israel, 2009). Beginning teachers are more likely to stay in the profession with mentoring (Boe, Cook & Sunderland, 2008). Billingsley and colleagues (2009) also found teachers with higher levels of induction support reported greater job manageability and increased success with diverse students; such as SWDs and CLD students. A national longitudinal study conducted from 2007-2012 revealed 80% of beginning teachers assigned a mentor remained through their first five years of teaching in comparison to 64% of teachers not assigned a mentor (Raue & Gray, 2015). As mentioned, these issues are exacerbated with teachers in diverse HNS.

Sustained, job-embedded, professional learning and mentoring is not only critical to retain teachers, but also has been shown to increase student achievement by 21 percentile points if the professional development is sustained, intensive, and content-focused (Weber, Tallman & Middleton, 2015). However, of the 1,300 research studies focused on the effect of teacher

professional development on student achievement by Yoon and associates, only nine met What Works Clearinghouse evidence standards, attesting to the paucity of rigorous research. In mathematics, Birman et al (2007) reported that few teachers receive intensive, sustained, and content-focused professional development in mathematics in individual schools.

IMPACT: The proposed project will (a.) retain and continuously develop teachers in HNS throughout their careers: program completion after a year-long clinical experience, include a two-year induction program into the profession, and continuous career development and enhancement through sustained support and mentorship using instructional coaching and job-embedded professional development to provide immediate and ongoing support to sustain highly-effective teachers, as evidenced by the highest possible effectiveness rating in mathematics; (b.) disseminate this redesigned model with district, state, and national partners.

**B.2. The extent to goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.**

The *initial goal* of this project focuses on the recruitment of prospective teachers from diverse backgrounds and mid-career professionals and identifies supervising teachers and instructional coaches as teams within HNS. Ms. Dahnke, who has extensive experience in recruitment, development, and induction of prospective teachers from diverse backgrounds in large, urban school districts, will lead this effort, in collaboration with project personnel, consultants and local school partners. Her collaboration with Dr. Shealey will replicate initiatives at Rowan University and with the Philadelphia schools have increased the numbers and teaching quality of highly effective African American males in schools for 2% to 30% (Institute of Labor Economics at Johns Hopkins, 2017). In addition, UCF has documented success in previously funded projects with a multi-faceted **Recruitment Model** (Table 1) designed to target high-quality educators, including



those from traditionally underrepresented groups. The model incorporates effective strategies and proven models aimed at national, state, community, and university levels.

Table 1: Recruitment Model

<b>Domain</b>	<b>Recruitment Sources</b>
National	Universities, Community Colleges, Clearinghouses, Disability Organizations, National Black Child Development (NBCD), Council for Exceptional Children
State	Universities including those serving CLD students such as Bethune Cookman University, Florida DOE, Florida DOH, FDLRS, SIG/PDP, Children’s Forum,
Community	Media, including local diverse newspapers: El Sentinel and La Prensa, School District Administrators, Church Leaders, Minority and Disability Networks
UCF	SAS, MTRRP, ODI, Faculty Referrals, Professional Associations, Undergraduates of Colleges outside of Education, Area Campuses, Project Graduates, UCF Center for Autism and Related Disabilities (UCFCARD), Toni Jennings Exceptional Education Institute (TJEEI), UCF Chapter of the National Association for Multicultural Education (NAME), and UCF Chapter of Student CEC
Personal	Recommendations, Professional Contacts, Distribution of Literature

*Targeted recruitment:* The variety of approaches included in this recruitment model has resulted in applicant pools from previously-funded federal projects that exceeded diversity goals. Because one focus of this project is to continue to increase educators from underrepresented groups, the design includes a major effort to disseminate through a variety of networks.

*CLD focus:* Efforts will be made to attract educators from CLD backgrounds by relying on strong, established relationships with organizations and resources that will continue to assist with the process. National organizations will be contacted to gather the necessary resources, tools and strategies in order to better serve and recruit scholars from CLD backgrounds. As students from CLD backgrounds currently represent 44.6% of UCF student enrollment, the project will utilize resources available through existing university offices such as the Minority Programs in Education (MPIE). For local recruitment, the project will benefit from established partnerships with high-need LEAs, administrators, and community leaders in central Florida. The UCF chapter of the National

Association of Multicultural Education (NAME) will attract students from diverse backgrounds. Recruitment will involve local media serving diverse communities.

*Disability Focus:* A special disability focus will include collaboration with partners identified to support educators with disabilities within an inclusive, educational environment. The UCF's Student Accessibility Services (SAS) and their counterparts at other IHE's will provide strong assistance in recruiting educators with disabilities. UCF currently has almost 2,000 students with disabilities enrolled. SAS, in conjunction with the Society of Scholars with Disabilities, provides ongoing mentorship and support to SWD. Services to assist participants will be provided. As a result of this multi-faceted model of recruitment, the numbers and quality of prospective teachers, especially teachers from diverse backgrounds, will increase, as well as be retained throughout the pre-service program of study with academic and peer supports within the revised recruitment, admissions, and priorities, aligned with the objectives of the HNS in the OCPS district.

The *second goal* of this project focuses is to develop, pilot, implement, rigorously evaluate, and disseminate an **Enhanced Partnership Model** focused on the knowledge, skills, and classroom implementation of evidence-based instruction, differentiation based upon assessment data, and interventions in mathematics and disciplinary literacy by both prospective and supervising teachers that improve mastery of rigorous academic standards in mathematics by students with diverse learning needs in HNS. This goal will build upon the collaborative synergy, knowledge, professional development, and procedures to meet the academic content standards (specifically rigorous mathematics and disciplinary literacy), technology for digital literacy, and culturally responsive teaching practices within classroom and school cultures to develop safe, caring, and inclusive classrooms and schools in high-need communities. The latest standards from Committee for the Accreditation of Educator Preparation (CAEP, 2018) state, "In response to the

changing K-6 Elementary education landscape, five new K-6 standards have been developed that focus more sharply than in the past on teacher *knowledge and skills related to diversity, child development, families, communication, and collaboration*. The new standards also require beginning teachers to possess a *deeper content knowledge* background than previously expected, as well as a deeper understanding of digital learning. These standards reflect the importance of *assessment literacy* and expect higher skills in *the use of data* to guide planning, instruction and feedback. There is greater emphasis on the knowledge base related to motivation and engagement, and the related knowledge bases for *social and emotional learning* in the K-6 years. There is increased emphasis on *evidence-based practices and the expectation of practice-based teacher education*. The new standards recognize that elementary teachers are no longer sole practitioners, but *part of a team*—sometimes in a leading role and sometimes in a supporting role (CAEP, 2018). To accomplish this vision for teacher preparation, development, and sustained support through careers, the major components of this proposal include:

- Project key personnel teams of national researchers, university and school district faculty, and experts co-construct the curriculum, content, implementation, and evaluation to connect research to practice using most current research, policies, and practices (See Appendix J);
- Enhanced, standards-based curriculum, specifically focused on rigorous mathematics and disciplinary literacy, aligned with competencies to improve student learning;
- School site-based delivery of professional development content modules available in multiple formats (face-to-face, webinars, electronic, etc.) and technology to provide flexibility;
- Competencies and performance tasks align with state certification requirements for prospective teachers (initial license); supervising teachers (content endorsements); instructional coaches (coaching endorsement); university faculty (certification renewals).

- School-based, professional learning teams (See above) meet at least weekly during the year-long, clinical experience for lesson studies, student data analyses, observation feedback, etc. for assure that teachers possess pedagogy and knowledge of EBPs to improve instruction;
- Authentic performance of class and individual student data, instructional decision-making, and instructional/intervention planning will be integral to various school teams, such as the Multi-Tier System of Support (MTSS) and/or the individual education plan (IEP) to differentiate instruction to meet the standards of students with diverse learning needs;
- Culturally-relevant, inclusive practices are foundational to content to develop social and emotional learning within classrooms and school community of learning. Modules of mental health and supports will be central to and involve multiple school and community services;
- Digital literacy technologies and universal design for learning (UDL) principles will be integral to pre-service courses and on-site professional development for completion of micro-credentials/digital badges (e.g., Microsoft, Google, Apple, etc.) and program requirements;
- Continuous use by participants of formative assessments, classroom and school-based, aligned with and using district, university, and state evaluation practices and procedures; and
- Mentoring by supervising teachers and instructional coaches will be continuous and supported with stipends and/or compensation to support extra skills and responsibilities.

The *third goal* of this project focuses on the retention and continuous development of teachers in HNS throughout their careers (year-long clinical experience, two-year induction program and continuous career development and enhancement through sustained support and mentorship using instructional coaching and job-embedded professional development to provide immediate and ongoing support to sustain highly-effective teachers, as evidenced by the highest possible effectiveness rating in mathematics); and disseminate this redesigned model with district,

state, and national partners. The components outlined to achieve Goal 2 set the foundation for induction and retention of prospective teachers in HNS. To provide these supports and trainings for participants, release time and/or stipends (for non-contract time) will be provided.

teams of educators will not only enhance implementation of EBP and data collection during classroom/school-based job-embedded performance tasks, but serve to sustain and continuously improve implementation and student mastery of mathematics. These Professional Learning Communities in identified HNS will receive sustained support with monthly professional development sessions. After two decades of research (Borman & Feger, 2006; Yoon et al, 2007), evidence indicates that job-embedded strategies can change teacher behavior. Thus, current initiatives focus on strategies for school reform (Gawande, 2010) that focus on teachers' taking more professional responsibility for educating students through a partnership approach to instructional coaching (Garet et al, 2001; Knight, 2011a). Professional development alone does not change teacher behavior, but instructional coaching will more likely lead to improved teacher practice (Knight, 2011a). The coaching approach in this proposal meets the evidence requirement priority based on the findings from two studies reviewed by the What Works Clearinghouse (WWC). Both studies meet WWC evidence standards without reservations.

Because the Instructional Coaches and the Professors in Residence are the primary agents for the professional development of supervising teachers and prospective teachers, it is essential that they receive high quality professional development to build their skills around standards-based content, effective coaching, job-embedded professional learning during the year of clinical experiences and the two year induction period, and effective teaching practices to meet the professional competencies in coaching (Professional Learning, n.d.) and from the FDOE (2018). Once selected by a team from UCF and OCPS, there are multiple, collaborative professional

development structures (Killion & Harrison, 2005) that enhance the knowledge and use of the necessary skills and competencies of mathematics teachers to implement EBPs in mathematics within a partnership approach among teachers and instructional coaches (Knight, 2011b.). Observations may be enhanced through covert coaching via Bluetooth technology. Adobe Connect video-conferencing will be used, in addition to regular site visits, to facilitate interactions among school-site teams. will be instituted as a source of continued learning among educators within schools. The efficient, effective use of technology and assessments are infused. Through continued collaboration and support of educators with release time, stipends, and course credit, the critical goal to improve, enhance, and meet the standards in mathematics using evidence-based instructional practices and interventions with fidelity. Instructional coaches engage in a formative self-assessment of their own growing skills using a continuum of development based on IC professional standards, a goal-setting process (with mid-year review and end-of- year reflections), a peer coaching process, and data collection.

This process builds the skills and capacity of a cadre of instruction-focused teacher leaders who demonstrate the ability to move adult practice forward. Principals, also, have the essential role that support and feedback in teacher effectiveness and retention, and work to expand the capacity of principals to support instructional coaching in their schools and the development of high quality teacher practice. This project will work with principals at selected OCPS HNS to implement formative supervision practices and research-based tools and protocols that are aligned to the locally-adopted evaluation framework, designed to support principals in providing evidence-based feedback that enhances teacher growth. Project key personnel will develop two professional development modules for site administrators: “Improving Student Achievement through Teacher Observation and Feedback” and “The Role of the Principal in Supporting High-

Impact Coaching.” The modules will develop principals’ capacity to work with teachers to advance their instructional practice through formative observation strategies and developmentally-appropriate, focused feedback. Principals benefit from 11 hours of professional development, designed to help develop permanent leadership capacity within the LEA and to foster collaboration among coachess, supervising teachers, student teachers, and administration.

As described in Competitive Preference Priority 2, in addition to its face-to-face instructional coaching, project personnel will provide supervising and prospective teachers with weekly, small group and one-on-one online, content-specific support through participation modules and face-to-face professional learning meetings in mathematics-Algebraic Thinking strand (FDOE, n. d.) and disciplinary literacy. Over a twelve-week period, teachers, coaches, and an expert in mathematics and disciplinary literacy engage in an ongoing asynchronous dialogue that assists teachers in planning and preparing a lesson, teaching and assessing that lesson, reflecting on the outcome and analyzing next steps, as alignment with district and state metrics.

**B.3. The extent to which the proposed project is designed to build capacity and yield results that will extend beyond the period of Federal financial assistance.**

The likelihood of sustainability after the project ends is high. This project incorporates an intentional sustainability and scale-up plan beginning in year 3 and involves reporting, publishing and dissemination of tools and knowledge across multiple national centers– CEEDAR; Great Teachers and Leaders at AIR. Additionally, the predominant number of diverse faculty needed to support this program are UCF employees and are already involved as identified by their ongoing assignments to course work and supervision. Further, the Deans of both the College of Community Innovation and Education and College of Sciences at UCF are supportive of the program as integral to established and continued programs. This project will benefit from the established components

of the program. Central Florida is a rapidly growing area with positive attributes including opportunities for a variety of learning experiences and rich in supportive resources, all of which make study in the proposed program highly desirable. Strategies and resources, including the use of technology, assure sustainability by leveraging non-project resources at UCF, AIR, and partner federal projects and local school districts. Program faculties are provided with professional development for online course delivery. (See Appendix H-Support Letters).

Within CEEDAR, key personnel will integrate Content Enhancement Modules (CEMs) focused on culturally responsive teaching, evidence-based practices in mathematics, multi-tiered system of supports, and high-leveraged practices within courses and professional development. In addition, AIR key personnel will co-construct all developed products (e.g., coaching within HNS, practice-based performance feedback) to develop the *Enhanced Partnership Model*. Rigorous evaluation will be conducted with a team from UCF and AIR during the initial two years of this project. Finally, key personnel from the federally-funded CEEDAR and AIR Centers will lead all national dissemination activities, initiating in Year 3, including publications, presentations, webinars, etc., while conducting comprehensive, national program evaluation of scale-up.

**B.4. The extent to which the proposed project represents an exceptional approach to the priority or priorities established for this competition.**

Given the multiple educational partners in this proposal, the commitment and synergy among the interdisciplinary partners is one of the exceptional approaches of this proposal. Experts in curriculum, teacher development, instructional coaching, and technology will co-construct standards-based content that aligns with the new CAEP standards for program accreditation, but also aligns with the school district policies and state requirements. The school-based, interdisciplinary teams of university, school district, and prospective and supervising teachers will



serve as a catalyst for improved learning and classroom practices and reforms within HNS. Authentic classroom teaching, coaching, and supervision provide the critical contexts to develop and continuously enhance teaching skills to meet the needs for students with diverse learning needs. In addition, the focus on rigorous mathematics and disciplinary literacy are critical content areas of needed improvement for teaching and learning, as each school-site team will integrate pedagogy and classroom practice to promote effective teaching skills in academic content areas. The infusion of technology for instruction, universal design for learning, communication, and assessments (data collection, aggregation, displays, etc.) develop 21<sup>st</sup> Century Skills among all participants. The extended and continuous support across preservice, certification, and induction are also exceptional approaches. Collaboration for formative and summative evaluation, provide critical information for personnel and project improvements, as aligned with district policies and state accreditations. Finally, dissemination of the *Enhanced Partnership Model*, including products, processes, and evaluation assessments, will be disseminated throughout systems represented by our national partners within educator preparation programs, federally funded Centers (e.g., AIR, CEEDAR, Great Teachers and Leaders), professional organizations.

**C.1. The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing the project tasks.**

The management plan for this project was developed based on overall project objectives (Table 3) which describes efficient administration and delivery of all components of the project. Activities, timelines, and milestones for accomplishing project tasks are described for overall project administrative management such as project staff meetings, collaboration with partners and advisory committee members, budget administration, responsibilities related to federal reporting,

and evaluation. Project tasks related to each of the three project goals are delineated. Co-Directors Little and Dahnke will direct and oversee all of the major project activities related to project goals, including fiscal, personnel, and overall administration. Co-Directors Little and Dahnke will facilitate coordination among UCF faculty and OCPS personnel, members of Advisory Committee, members of the Technical Working Groups (aka, Curriculum Committees), and external consultants to assure alignment, completion, and sustainability of project goals, objectives, and outcomes. Dr. Hahs-Vaughn will oversee the evaluation processes, assessments, rigorous evaluation and procedures to assure completion and that each meet the standards described by the What Works Clearinghouse. The project coordinator will assure quality and efficient completion of project management tasks and clinical coordination. Project staff will meet bi-monthly and follow the management plan to initiate, update status, review and evaluate activities relative to project objectives. Action planning will assist in achieving objectives on time and within guidelines of the budget and plans. Successful execution of this TQP project will achieve three key objectives:

***-Recruit teacher candidates, clinical supervisors, and instructional coaches to increase diversity in the educator workforce and become highly-effective teachers in mathematics for students with diverse learning needs and disabilities in HNS;***

***-Develop, pilot, implement, rigorously evaluate, and disseminate an Enhanced Preparation Model focused on the knowledge, skills, and classroom implementation of evidence-based instruction and interventions in mathematics and disciplinary literacy by both prospective and supervising teachers that improve learning in mathematics for students with diverse learning needs in HNS;*** and

***- Retain and continuously develop teachers in HNS throughout their careers: program completion, induction into the profession, and continuous career development and enhancement through sustained support and mentorship; disseminate this redesigned model with district, state, and national partners.*** The

American Institutes of Research (AIR) is a federally-funded center focused on the recruitment and

development of effective teachers in subsequent years, while sustaining efforts to retain teachers, clinical supervisors, and instructional coaches through program completion, induction into the profession, and career development and enhancement within sustained, job-embedded professional learning and mentorship. These objectives will be met through the action steps and milestones outlined in the management plan below. (See Table 2.)

Table 2: Management Plan

<b>Project Management Plan and Timeline</b>	
<b>Objective 1: Recruit prospective teachers from diverse backgrounds and identify supervising teachers and instructional coaches as teams within identified HNS.</b>	
<b>Timeframe</b>	<b>Activities</b>
<p>Initial Preparation (Recruitment and Development)  Oct.-Dec., 2018</p>	<ul style="list-style-type: none"> <li>● Develop/submit IRB.</li> <li>● Meet with project Advisory Board Committee (ABC) and Technical Working Committee (TWC) members (National and state consultants in mathematics, disciplinary literacy, interventions, socio/emotional learning, instructional coaching) and OCPS and UCF personnel for planning and development.</li> <li>● Co-develop content, calendars, and supports of <i>Enhanced Partnership Model (EPM)</i> for the initial pilot implementation.</li> <li>● Identify district and university instruments and observation rubrics</li> <li>● Develop/ implement efficient recruitment strategies and procedures</li> <li>● Recruit diverse prospective teachers who consent to participate in initial pilot, including those from traditionally underrepresented groups.</li> <li>● Meet with school district personnel and university personnel to co-construct professional development, finalize modules, and to develop pilot implementation calendar for Spring, 2019 for pilot elementary</li> </ul>

<p><b>Objective 2:</b> Develop, pilot, rigorously evaluate, and disseminate an <i>Enhanced Preparation Model</i> focused on the knowledge, skills, and classroom implementation of evidence-based instruction and interventions in mathematics and disciplinary literacy by both prospective and supervising teachers that improve learning in mathematics for students with diverse learning needs in HNS.</p>	
<p>Pilot Implementation</p> <p><i>Enhanced Partnership Model- Pilot Elementary School</i></p> <p>Jan.-May, 2019</p>	<ul style="list-style-type: none"> <li>● Collect all pre-test data across consented participant prospective teachers, supervising teachers, and instructional coaches.</li> <li>● Teach enhanced pedagogical methods and mathematics content in pilot modules (pre-service) and professional development (school -site ).</li> <li>● Host onsite sessions with instructional coaches and Professors in Residence.</li> <li>● Complete treatment fidelity observations by Co-PI in statistics to ensure treatment implementation fidelity and analyze technical adequacy of developed rubrics.</li> <li>● Collect all post-test data across consented participant prospective teachers, supervising teachers, and instructional coaches.</li> </ul>
<p>Analyses from Pilot</p> <p>Preparation for Scale-Up- <i>Enhanced Partnership Model- All Feeder Elementary Schools</i></p> <p>Summer, 2019 End of Year 1</p>	<ul style="list-style-type: none"> <li>● Analyze data from pilot semester according to WWC standards.</li> <li>● Analyze data collected from Spring, 2019 pilots to meet WWC standards.</li> <li>● Based on results, enhance/revise procedures, resources, etc. for year 2 with TWG members.</li> <li>● Make any enhancements to design, treatment, resources, etc. for Cohort 1: all elem. HNS implementation Fall, 2019-Spring, 2020.</li> <li>● Write year 1 report; Confer with USDOE Program Officer.</li> <li>● Write journal papers to disseminate findings in mathematics education, special education, and intervention professional journals.</li> <li>● Based upon vetted efficient recruitment strategies and procedures, recruit 60 prospective teachers to participate in one year of clinical experiences, including those from traditionally underrepresented groups.</li> <li>● Develop to implementation calendar with school district partners and</li> </ul>
<p>Scale Up</p> <p><i>Enhanced Partnership Model All Feeder Elementary Schools</i></p> <p>Aug.-Dec., 2019</p>	<ul style="list-style-type: none"> <li>● Initiate program with 60 recruited participants (pre-service), supervising teachers, and instructional coaches per school district sites.</li> <li>● Collect all pre-test data across consented participants, prospective teachers, supervising teachers, and instructional coaches.</li> <li>● Conduct the professional development in mathematics and instructional coaching to consented participants</li> <li>● Collect, analyze weekly observational and treatment implementation fidelity data to finalize treatment resources data collection</li> <li>● Collect all post-test data across consented participants prospective</li> </ul>

<p>Complete Scale-Up:</p> <p><b><i>Enhanced Partnership Model All Feeder Elementary Schools</i></b></p> <p>Jan.-May, 2020</p>	<ul style="list-style-type: none"> <li>• Meet with Technical Working Groups (project advisory, curriculum, professional development, evaluation advisory committees); members (national and state consultants in mathematics, intervention, curriculum).</li> <li>• Conduct the professional development in mathematics, interventions, and instructional coaching using data.</li> <li>• Conduct weekly observation and feedback sessions -coaching.</li> <li>• Collect and analyze weekly dosage and treatment implementation fidelity data.</li> <li>• Collect all post-test data across consented participants prospective teachers, supervising teachers, and instructional coaches.</li> <li>• Analyze data collected from Fall, 2019 and Spring, 2020 participants based upon design to meet WWC standards.</li> <li>• <del>From feedback and with curriculum committee members, develop</del></li> </ul>
<p>Analyses from Pilot Scale-Up UCF Sites</p> <p><b><i>Enhanced Partnership Model</i></b></p> <p>Summer 2020 End of Year 2</p>	<ul style="list-style-type: none"> <li>• Analyze data collected from Fall, 2019 and Spring 2020 implementation based upon design to meet WWC standards.</li> <li>• Write year 3 report. Review with USDOE Project Officer.</li> <li>• Meet with Technical Working Group members to review data, revise.</li> <li>• Finalize <b><i>Enhanced Partnership Model</i></b>, including resources, processes, and research for pilot dissemination through CEEDAR and AIR.</li> <li>• Write journal papers to disseminate findings in mathematics education, special education, and intervention professional journals.</li> <li>• Present process and findings in mathematics education and instructional coaching state and national professional conferences.</li> <li>• Recruit another 120 TCs who consent to participate in scale-up central Florida research study, while developing overall project research across national sites, as stated within Design (60 new elementary-Cohort #2;</li> </ul>
<p>Elementary Schools-Continue</p> <p>Middle Schools-Pilot</p> <p><b><i>Enhanced Partnership Model</i></b></p> <p>Fall, 2020 Aug.-Dec., 2020</p>	<ul style="list-style-type: none"> <li>• Meet with Technical Working Groups to develop induction plans, sustained professional development, and resources.</li> <li>• Collect all pre-test data across consented participants: prospective teachers, supervising teachers, and instructional coaches.</li> <li>• Conduct the professional development in mathematics, interventions, and instructional coaching using data.</li> <li>• Conduct weekly observation and feedback sessions -coaching.</li> <li>• Collect all post-test data across consented participants</li> <li>• Analyze data collected from Spring 2020 pilots that meet WWC standards.</li> <li>• Plan for Implementation for middle school site in Spring 2021</li> <li>• Develop/ submit IRB for secondary sites.</li> <li>• Meet with school district personnel and university personnel to co-construct professional development, finalize modules, and to develop implementation calendar for Spring, 2021 for pilot middle school</li> </ul>

<p><b><i>Enhanced Partnership Model</i></b></p> <p><b><i>Pilot Feeder Middle Schools</i></b></p> <p>Spring, 2021 Jan.-May, 2020</p>	<ul style="list-style-type: none"> <li>● Prepare instruments and observation rubrics to address evaluation questions.</li> <li>● Develop efficient recruitment strategies and procedures to implement.</li> <li>● Recruit 60 prospective teachers who consent to participate in initial pilot, including those from traditionally underrepresented groups.</li> <li>● Implement all research procedures, products, professional development as finalized during pilot administrations and research across middle school sites.</li> <li>● Collect all pre-test data across consented participants, prospective teachers, supervising teachers, and instructional coaches.</li> <li>● Conduct the professional development (face-to-face, modules, coaching sessions) with consented participants</li> <li>● Implement induction plans, professional development, and resources.</li> <li>● Conduct weekly instructional coaching with participants in courses, clinical experiences, and internship and national CEEDAR staff</li> </ul>
<p>Analyses from Pilot</p> <p><b><i>Pilot Feeder Middle Schools</i></b></p> <p><b><i>Enhanced Partnership Model</i></b></p> <p>Prepare: National Dissemination</p> <p>Summer 2021 End of Year 3</p>	<ul style="list-style-type: none"> <li>● Analyze data collected from Fall 2020 and Spring 2021 implementation based upon Design to meet WWC standards.</li> <li>● Write year 4 report. Review with USDOE Project Officer.</li> <li>● Meet with Technical Working Groups</li> <li>● Finalize <b><i>Enhanced Partnership Model-Middle School Sites</i></b>, including resources, processes, and research for pilot dissemination-CEEDAR and AIR.</li> <li>● Write journal papers to disseminate findings in mathematics education, special education, and intervention professional journals.</li> <li>● Present process and findings in Summer Institutes to disseminate <b><i>Enhanced Partnership Model</i></b> through the American Institutes of Research-CEEDAR Center to university-school district teams.</li> <li>● Upload and finalize product and module dissemination through electronic web-based sources for national, pilot scale-up implementation.</li> <li>● Plan for Implementation for high school site in Fall 2021</li> <li>● Meet with project advisory committee members to co-construct professional development, finalize modules, and to develop implementation calendar for Fall 2021 for pilot high school sites.</li> <li>● Enhance courses and supports in school with Professors in Residence for co-constructed curriculum modules for the initial HS implementation.</li> <li>● Recruit another 120 students who consent to participate in scale-up central Florida research study, while developing overall project</li> </ul>

<p><b><i>Enhanced Partnership Model</i></b></p> <p><b><i>Pilot Feeder High Schools</i></b></p> <p>Aug.-Dec., 2021 Fall, 2021</p>	<ul style="list-style-type: none"> <li>● Prepare instruments, observation rubrics to address evaluation questions.</li> <li>● Implement efficient recruitment strategies and procedures to implement.</li> <li>● Implement all research procedures, products, professional development as finalized during pilot administrations and research across partnership sites.</li> <li>● Collect all pre-test data across consented participants</li> <li>● Conduct the professional development (face-to-face, modules, coaching sessions) with consented participants: prospective teachers, supervising teachers, and instructional coaches.</li> <li>● Collect and analyze weekly observational and implementation fidelity data by project team members.</li> <li>● Implement induction plans, professional development, and resources for participants in elementary and middle school sites.</li> <li>● Initiate/continue induction activities and data collection for cohorts</li> </ul>
<p>Reliability and Sustainability of Model- Secondary Schools</p> <p><b><i>Enhanced Partnership Model</i></b></p> <p>Jan.-May, 2022 Spring, 2022</p>	<p>1 and 2.</p> <ul style="list-style-type: none"> <li>● Meet with Technical Working Groups/Curriculum Committees.</li> <li>● Collect all pre-test data across consented participants</li> <li>● Conduct the professional development in mathematics, interventions, and instructional coaching using data.</li> <li>● Collect and analyze weekly dosage and treatment implementation fidelity data.</li> <li>● Collect all post-test data across consented participants, prospective teachers, supervising teachers, and instructional coaches.</li> <li>● Analyze data collected from Spring 2021 pilots to meet WWC standards.</li> <li>● Meet with school district and university personnel to co-construct professional development, finalize modules, and to develop implementation calendar for Spring 2023 for pilot middle school sites.</li> <li>● Enhance courses and supports in school with Professors in Residence for co-constructed curriculum modules for the initial pilot implementation Sites in high schools for content: Advanced</li> </ul>

<p>Analyses from Pilot Scale-Up</p> <p><b>High School Sites</b></p> <p><b>Enhanced Partnership Model</b></p> <p>Prepare: National Dissemination and Replication/ Validation</p> <p>Summer 2022 End of Year 4</p>	<ul style="list-style-type: none"> <li>Analyze data collected from Fall 2020 and Spring 2021 implementation based upon Design to meet WWC standards.</li> <li>Write year 4 report. Review with USDOE Project Officer.</li> <li>Meet with Technical Working Groups (project advisory, curriculum, professional development, evaluation advisory committees); members (National and state consultants in mathematics, interventions, curriculum).</li> <li>Finalize <b>Enhanced Partnership Model-Secondary School Sites</b>, including resources, processes, and research for pilot dissemination-CEEDAR and AIR.</li> <li>Write journal papers to disseminate findings in mathematics education, special education, and intervention professional journals.</li> <li>Present process and findings in mathematics education and instructional coaching state and national professional conferences.</li> <li>Plan for Implementation for district scale-up during FY 2022-2023.</li> <li>Meet with project advisor committee members (national and state consultants in mathematics, interventions, curriculum) and OCPS and UCF personnel to finalize product development-entire model.</li> <li>Upload and finalize product and module dissemination through electronic web-based sources for national, pilot scale-up implementation.</li> <li>Recruit another 120 students who consent to participate in scale-up</li> </ul>
<p><b>Objective 3:</b> Retain and continuously develop teachers in HNS throughout their careers: program completion, induction into the profession, and continuous career development and enhancement through sustained support and mentorship. Nationally disseminate and rigorously evaluate this scalable, redesigned model with national partners through the American Institutes of Research (AIR) that will result in more effective teachers in</p>	
<p>Continued Induction/ Professional Learning Reliability and Sustainability of Model</p> <p>Fall, 2022</p>	<p>subsequent years,</p> <ul style="list-style-type: none"> <li>Implement all research procedures, products, professional development as finalized during pilot administrations and research across all OCPS HNS.</li> <li>Collect all pre-test data across consented participants prospective teachers, supervising teachers, and instructional coaches.</li> <li>Conduct the professional development (face-to-face, modules, coaching sessions) with consented participants (initial through induction)</li> <li>Conduct weekly instructional coaching with participants in courses, clinical experiences, and internship and national CEEDAR staff.</li> <li>Collect and analyze weekly observational and implementation fidelity data by project team members.</li> </ul>



<p>Continued Induction/ Professional Learning Reliability and Sustainability of Model</p> <p>Jan.-May, 2023 Spring, 2023</p>	<ul style="list-style-type: none"> <li>● Implement all research procedures, products, professional development as finalized during pilot administrations and research across OCPS partnership sites within same school district.</li> <li>● Collect all pre-test data across consented participants</li> <li>● Conduct the professional development (face-to-face, modules, coaching sessions) with consented participants</li> <li>● Conduct weekly instructional coaching with participants in courses, clinical experiences, and internship and national CEEDAR and AIR staff.</li> <li>● Collect and analyze weekly observational and implementation fidelity data by project team members.</li> <li>● Conduct longitudinal data collection across sites, as in Design.</li> <li>● Implement induction plans, professional development, and</li> </ul>
<p>State and National Dissemination</p> <p><b>District Model: Elementary and Secondary</b></p> <p>Summer, 2023</p>	<ul style="list-style-type: none"> <li>● Meet with ABC and Technical Working Groups</li> <li>● Analyze data collected from all years (pilot and years of implementation-elementary and secondary).</li> <li>● Write journal papers to disseminate findings in mathematics education, special education, and intervention professional journals.</li> <li>● Present process and findings in mathematics education, special education, and intervention at state and national professional conferences.</li> <li>● Write final report. Review with USDOE Project Officer.</li> <li>● Disseminate to national university stakeholders through the partners with the Florida Department of Education, CEEDAR project with the American Institutes of Research.</li> <li>● Complete and disseminate products re: reforms in teacher preparation through AIR and CEEDAR.</li> <li>● Complete all revised procedures, methods, content enhancements, etc.</li> </ul>

**C.2. The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding.**

Because the collaborative design of this proposal builds upon the CAEP accreditation standards, the licensure and certification policies of the Florida Department of Education, and builds upon the instructional initiatives and curriculum of OCPS, the potential for this program to continue at the end of federal funding is very high. The fully qualified and certified project graduates will have a positive impact on the field with resultant benefits for rapidly growing

Central Florida and its multi-million, multi-ethnic population. This is especially true as project graduates will be prepared to have major impacts on the children, families, and professionals serving students in HNS. Project objectives are designed to firmly place UCF at the forefront of teacher preparation through increased collaboration with national and state educational communities. The CCIE recently ranked 7<sup>th</sup> in the state of Florida for teacher production and quality of eighty-seven institutions. It is clear from the positive feedback from the field, including the heads of various state units, local units, LEAs and agencies, and parents, as documented by the letters of support, that the environment in Florida is one of collaborative support and need for this program. Based on input from key stakeholders, a teacher preparation program that incorporates coursework as specified represents a significant accomplishment. Further, sustainability after the project ends is high. The predominant number of diverse faculty needed to support this program are UCF employees and are already involved as identified by their ongoing assignments to course work and supervision. Letters of support and continued commitment from local and national partners also assure sustainability and dissemination. This project will benefit from the established components of the program which received this award. Central Florida is a rapidly growing area with opportunities for a variety of learning experiences and supportive resources, all of which assure sustainability and replicability highly desirable.

**C.3. The adequacy of support, including facilities, equipment, supplies and other resources, from the applicant organization or the lead applicant organization.**

UCF and its collaborating partner facilities are located in a highly accessible area and include UCF bus transportation to our Teaching, Learning and Leadership Academy and a renovated Education Complex. These facilities opened in the Summer of 2004 with enhanced technology capabilities for delivery of instruction, electronic communication, and video and virtual

production capabilities. CCIE equipment includes three major computer laboratories with new equipment available. Instructional projection equipment is available for use in rooms that are now permanently equipped with up-to-date control panels. Participants will also benefit from a computing and statistical technology lab that opened in Fall, 2010. Through this lab, one-on-one support from faculty in the department of educational research, technology, and leadership to complete coursework and research requiring statistical analysis is available. Faculty members are provided cutting-edge electronic instructional facilities and digital literacy tools and software. University and community partners have also contributed office and instructional space for project support during internships and project activities. The CCIE houses an Education Materials Center staffed by highly-competent library personnel. The Center, which has 4,000 total square feet, contains 30,000 volumes, a collection of Florida-approved textbooks, and an extensive collection of standardized tests. The main University Library, housed in a facility of 226,000 square feet, has a collection of over 1.4 million volumes, adding almost 200 volumes to its collection each day. The library provides access to 20,000 electronic books and 24,000 full-text journals. All of these resources, services, and digital assets are available to our partners. UCF's Course Development & Web Services (CDWS) is recognized as a leader in the fields of information technology and on-line learning, earning a Telly Award for excellence in video production, Davis Productivity Awards for new system development and software application, a Gold Award from the American Association of Webmasters, and a Sloan-C Excellence in Online Teaching and Learning Award. All ESE program faculties have participated in CDWS trainings and use technology to enhance and improve online course delivery. Computers and software provided by UCF are dedicated to support project data management, online instruction, remote

supervision, video libraries, virtual learning, and development of demonstration classrooms, including video development of EBPs and strategies.

#### **D. Quality of the Project Evaluation**

**D. 1.** The evaluation of the proposed project is designed to serve formative and summative purposes, and to provide useful data on both the implementation and outcomes of the *Enhanced Partnership Model* in mathematics. To assess impact of the curriculum and training developed for this project, *formative* feedback will focus on teachers' implementation of project teaching approaches, as well as teachers' perceptions regarding their own mathematics self-efficacy. This data will allow project personnel the opportunity to refine the components of the proposed pre-service training and professional development induction support model, in order to facilitate the best implementation possible. The *summative* purpose of this evaluation is to assess whether or not the proposed preservice training and professional development support model meets the goal of improving teacher candidates' content knowledge about mathematics and implementation of evidence-based practices and self-efficacy. The summative evaluation will also investigate whether the students in the HNS demonstrated improved mathematics achievement.

**Research Questions** The evaluation addresses formative and summative research questions.

##### *Summative: Impact Evaluation*

1. What is the effect of participating in the *Enhanced Partnership Model* on educators' outcomes (i.e., pedagogical content knowledge in mathematics and math self-efficacy)?
2. What is the effect of educators' participating in the *Enhanced Partnership Model* on their students' mathematics achievement (i.e., i-Ready Diagnostic for Mathematics, Florida State Assessment in mathematics)?

##### *Formative: Implementation Evaluation*

3. To what extents are the components of the evidence-based instructional and intervention practices implemented with fidelity?

#### Impact Evaluation Randomized Controlled Trial

During either the fall or the summer semesters preceding each year of implementation, prospective teacher will be recruited from amongst those scheduled to enroll in *Standards-based Mathematics Core Instruction* (SMCI) and *Diagnostic Assessment and Intensive Intervention Planning* (DAIIP) (study courses) to participate in the study. A total of 240 teacher candidates and 240 interns will be recruited to participate in the study for *elementary cohorts*: 60 teacher candidates for SMCI and 60 teacher candidates for DAIIP in each year, years 2 through 5 (i.e., 4 cohorts with year 5 being a replication and validation year). There are generally 30 of teacher candidates who enroll in each course, and multiple sections of each course are offered each semester (up to 6 sections). Thus, recruiting 60 per course per cohort is reasonable. In year 3, the first *middle school cohort* will be added: 30 teacher candidates for SMCI and 30 teacher candidates for DAIIP. New middle school cohorts will be added in year 4 and 5. Thus a total of 90 middle school teacher candidates and 90 interns will be recruited to participate in the study (years 3, 4, and 5 will include middle school cohorts). In year 4, a high school cohort will be added: 30 teacher candidates for SMCI and 30 teacher candidates for DAIIP; and another high school cohort will be added in the year 5 replication and validation year. Thus, a total of 60 high school teacher candidates and 90 interns will be recruited to participate in the study (years 4 and 5 will include high school cohorts).

Research suggests that inservice and preservice teachers may differ on outcomes measured in this study. Thus, to reduce bias and potentially yield a stronger treatment effect, a randomized block design will be applied with teachers blocked by whether they are pre-service or in-service and randomization occurring within block. Teacher candidates who agree to participate in the study

will be randomly assigned to either the treatment or control conditions within block using a computer generated random ordered list. The treatment condition will consist of co-taught sections of SMCI and DAIP that include applied, inquiry-based, performance tasks (enhanced assignments) and an enhanced internship to teach at a school site. The control condition will be the typical business-as-usual course, which will include typical instruction and a typical, non-enhanced internship.

Typically 6-10 supervising teachers (one per each prospective teacher) from each HNS/internship site participate in the program. Some prospective teachers expected to enroll in the SMCI or DAIP courses will already be teaching in schools on emergency credentials. In cases in which teacher candidates are teaching in schools, the school in which they are employed will take on treatment status of the prospective teachers. The internship site will take on the treatment status of the assigned teachers.

The impact evaluation is designed to meet What Works Clearinghouse evidence standards without reservations, including random assignment of teacher candidates to the intervention and comparison groups. Both differential (i.e., between groups) and overall attrition at the cluster (i.e., teacher level) and sub-cluster (i.e., student level) will be monitored. The study procedures minimize the possibility of both differential and overall attrition by offering teachers stipends to participate and by assisting with student data collection efforts. Baseline equivalence, as measured in standard deviation units, between the analytic sample of teachers and students in the intervention and comparison groups will be determined. An attrition bias of less than .05 for overall and differential attrition will be considered acceptable and will yield a WWC rating of 'meets evidence standards'. Should there not be equivalence at baseline equivalence requirements (specifically .05 to .25 absolute standardized mean difference between groups), as per WWC, propensity score

matching (Rosenbaum & Rubin, 1983) will be used to balance pre-intervention covariates and reduce bias.

*Teacher Outcomes.* The randomized controlled trials (RCTs) will examine the impact of participation in the project on two teacher outcomes—mathematical knowledge for teaching and math self-efficacy. For all measures, teacher candidates will complete the pre-tests during the first class session of their assigned course. Teacher candidates will complete the first post-tests during the final session of their assigned class, and they will complete the second post-tests at the end of internship.

To assess mathematical knowledge for teaching, teacher candidates in treatment and control conditions will complete the *Mathematical Knowledge for Teaching (MKT) Measures in Mathematics*. Researched and developed at the University of Michigan, these measures will be administered to teacher candidates as pre- and post-tests to explore teachers' reasoning about mathematics and student thinking as a basis for sustained professional development (Hill, Ball, & Schilling, 2008). The MKT is a 34 item assessment that includes 12 number and operations, 14 geometry, and 8 algebra problems and has three parallel forms. Score reliability for the MKT for pre-service teachers is .85 (Gleason, 2010) and for in-service teachers .78 (Hill & Ball, 2004). Evidence of content validity was obtained via factor analysis.

Additionally, teacher candidates' mathematics self-efficacy will be assessed using two measures: (1) a Likert-scale confidence measure for sample algebra problems (Pajares & Miller, 1997), and (2) self-report of self-efficacy (Pajares & Barich, 2005). The internal consistency was very good ( $\alpha = .93$ ); and validity was supported by both convergent validities with students' self-reports of previous math grades ( $\xi = .51$  and  $r = .58$ ) and concurrent validity with students' desired future grades in mathematics ( $r = .52$  and  $r = .58$ )

*Student Outcomes.* The impact of teachers' participation in the project on three student mathematics outcomes will also be examined. Student outcomes include the Florida Standards Assessments (FSA) Mathematics Test (grades 3-8) and i-Ready Diagnostic for Math (grades K-12). The FSA Mathematics test is the state mathematics standardized assessment administered to students in grades 3-8. Internal consistency reliability for the FSA math subtest is .90 to .95. Content validity is evidenced by alignment with the Florida math standards. Construct validity was evidenced by second-order confirmatory factor analysis (FDOE, 2016).

The i-Ready Diagnostic for Math is an adaptive diagnostic using Rasch IRT that reports scale scores to allow comparison across grade levels, among other scores. Scores from i-Ready Diagnostic have been shown to have content validity and correlate highly with PARCC and other common core state assessments (<http://www.curriculumassociates.com/products/ready-research-iRdiag-it-works.aspx>), including evidence to suggest that i-Ready Diagnostic can predict students' proficiency on state standardized tests (.90 and higher ROC analysis Area Under the Curve values; values greater than the National Center on Response to Intervention's standard) (Curriculum Associates, 2016). Students will complete i-Ready every nine weeks. Students complete the FSA during late spring with the schedule imposed by the Fl. Dept. of Education.

Additional formative data on prospective teachers' exposure to the intervention (attendance in assigned course session, attendance at internship), internship performance (observation data, ratings from supervising teachers, instructional coaches, Professors in Residence) and perceptions of the training they have received (focus groups, teacher surveys). The data will provide information regarding implementation of the project, as well as formative feedback that can be used to modify project components. Teacher data will be collected using course attendance data, teacher observations, teacher focus groups, and mentor surveys/ratings.



*Fidelity of Implementation.* A tool to assess fidelity of implementation will be developed and piloted during year 1 from OCPS and CEEDAR Center sources. Operational definitions for each key component of the year-long clinical experiences and two-year induction period of professional development support model will be developed, a fidelity scale for assessing dosage, and a criterion to assess level of implementation (high, moderate, low) will be established. Multiple data sources will be used to supplement the fidelity measure (e.g., instructor logs, attendance reports). Observations of a random sample of 10% of class sessions held in treatment courses during each semester across years 2 through 5 will be conducted. Fidelity observations will be simultaneously conducted by two staff to assess inter-rater agreement.

*Course Attendance.* Prospective teachers' attendance will be collected from the instructors of each section (treatment and control). This data will be used to assess teacher exposure to course material.

*Teacher Observations.* Observations will be used to examine the extent to which the curriculum addresses the intended elements and also to determine how participation impacts instructional practices. Observations of teacher candidates in the treatment group will be conducted eight times (approximately once every other week) during teacher candidates' internship semester. Observation rubrics will be constructed during fall 2018, based upon the evidence-based Innovation Configurations (CEEDAR, n.d.), evaluation rubrics from UCF and OCPS, externally validated instruments, and will focus on the domains of: evidence-based practices; culturally-relevant instructional practices; differentiation, curriculum-based assessments; and data-based decision-making. Observations will be simultaneously conducted by two project staff to assess inter-rater agreement. This data will be used to provide feedback to teacher candidates about

their instructional performance, as well as provide information to project PIs about which practices and methods training modules might need extra emphasis or alternation.

*Teacher Focus Groups.* Focus groups with treatment teachers will be conducted twice for each cohort—once per semester. The first set of focus groups will be conducted while teacher candidates are enrolled in the enhanced versions of the SMCI or DAIP courses (focus groups will be conducted separately for each course). During these focus groups, prospective teachers will be asked to reflect on course content, course instruction, and course activities. The second set of focus groups will focus on prospective teachers’ internship (clinical experiences) and induction experiences. Prospective teachers will be asked to respond to and discuss questions about coaching received from their mentors (supervising teachers, Professors in Residence), experiences in the classroom (including which practices and strategies worked well with students and which did not), and usefulness of feedback they received from their observations. Approximately 8-10 teachers from each course modules and/or micro-credential will be randomly selected to participate in each focus group.

*Supervising teacher Surveys/Ratings.* Supervising teachers will be asked to complete an online survey in which they will be asked to complete information regarding their teacher candidate during the semester, as well as information about the professional development that they received. The survey will be designed to be completed in less than 20 minutes. Mentors will be asked to provide the number of days their prospective teacher was absent from the internship, rate their prospective teachers’ preparation for and readiness for teaching, and provide additional feedback/comments about their prospective teachers. Additionally, supervising teachers will be asked to respond to a series of questions about the usefulness and quality of the professional development they received during the semester.

*Formative Data Analysis.* The formative study will yield quantitative and qualitative data. Quantitative data will be analyzed using descriptive statistics. Means, frequencies, standard deviations, and numbers of participants/respondents will be calculated and provided as appropriate for the type of data. Qualitative data, including the focus group data, will be analyzed using the NVivo software package. The evaluation team, led by Dr. Hahs-Vaughn and Dr. Little, will use a Grounded Theory approach, which allows researchers to examine the data for pre-determined themes, but also for unexpected themes that may emerge organically from the data. Researchers will collect, review, and code the data iteratively. This means that data analysis will begin immediately after the first focus group is conducted. This approach maximizes researchers' flexibility and responsiveness to the data and to stakeholders.

*Expected Statistical Power.* The study was powered to detect a significant meaningful effect. The minimum detectable effect sizes (MDES) for this outcome was estimated using Optimal Design Plus Empirical Evidence. We estimated the MDES separately for each cohort of teachers, as well as for a combined cohort for each grade level. We assume an interclass correlation (ICC) of 0.15. We also assume that level-2 covariates will account for approximately 20 percent of the variance ( $R^2_{\text{level2}}$ ). Although the study is powered to be able to detect effects on student outcomes, we also calculated the MDES for the teacher outcome analyses. For these analyses, we assumed that teacher characteristics and pretests would account for approximately 50 percent of the variance ( $R^2_{\text{level1}}$ ). Table 4 displays the assumptions and MDES.

Table 4. Minimum Detectable Effect Sizes for Outcomes Analyses

<b>Cohort</b>	<b>ICC</b>	<b># Teachers/Schools</b>	<b><math>R^2_{\text{level1}}</math> (students)</b>	<b>MDES</b>
<b>Student Outcomes</b>				
			<b><math>R^2_{\text{level2}}</math> (teachers)</b>	
<b>Elem. Cohort</b>	.15	60 SMCI, 60 DAIP	.20	.24
<b>Combined Elem.</b>	.15	180 SMCI, 180 DAIP	.20	.11

<b>Cohorts*</b>				
<b>MS Cohort</b>	.15	30 SMCI, 30 DAIP	.20	.20
<b>Combined MS Cohorts*</b>	.15	60 SMCI, 60 DAIP	.20	.14
<b>HS Cohort</b>	.15	30 SMCI, 30 DAIP	.20	.20
<b>Teacher Outcomes</b>				
<b>Elem. Cohort</b>	.15	60 SMCI, 60 DAIP	.50	.25
<b>Combined Elem. Cohorts*</b>	.15	180 SMCI, 180 DAIP	.50	.14
<b>MS Cohort</b>	.15	30 SMCI, 30 DAIP	.50	.35
<b>Combined MS Cohorts*</b>	.15	60 SMCI, 60 DAIP	.50	.29
<b>HS Cohort</b>	.15	30 SMCI, 30 DAIP	.50	.35
<b>Combined HS Cohorts*</b>	.15	60 SMCI, 60 DAIP	.50	.25

*\*Combined cohorts exclude year 5, replication and validation year; thus combined cohorts = years 2, 3, and 4 for elementary, years 3 and 4 for middle school, and year 4 only for high school; estimated 25 students per teacher*

*Outcomes Data Analysis.* Evaluators will estimate the impact of the project on educator outcomes using a single-level analysis of covariance model. The impact of the project on student outcomes will be estimated using a two-level, hierarchical linear regression model. Level-1 in these analyses will be students, and level-2 will be educators/schools. Since we expect only one teacher per school to participate in the program, both teacher and school characteristics will be included in level-2. Analyses will be conducted separately for each cohort. Additionally, analyses combining cohorts will be analyzed. Results will be presented in standard score (i.e., the estimated difference between treatment and control schools in the test/measure score metric) and effect size metrics. Each year, the data gathered from the project will be compiled and analyzed to produce an annual report to first evaluate impact and progress towards project goals and outcomes, as well as disseminate through our partners. Information about procedures, materials, and evaluation results of the **Enhanced Preparation Model** will be submitted to appropriate journals; such journals will include, but not be limited to, *Teacher Education and Special Education, Intervention in School and Clinic, and Teaching Exceptional Children*. Presentation proposals will be submitted to state and national conferences, including those sponsored by the

CEC. Scholars will be encouraged to participate in presentations and professional organizations (e.g., FL Teacher Education Division, FCEC) for learning and socialization into the profession, with a focus on meetings in Florida.

**D.2. The extent to which the methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project.**

This Project Evaluation employs multiple perspectives, uses a wide range of qualitative and quantitative methods, and triangulates data to assess and interpret a multiplicity of information. The three project goals are comprehensively and continuously evaluated using formative evaluation data to provide timely feedback to/from project stakeholders to assess ongoing teacher performance measures, project processes and products to permit periodic assessment of progress toward achieving intended outcomes, and summative evaluation data to report results to USDOE in annual and final performance reports, as well as disseminate professionally. The Joint Committee (2011) Program Evaluation Standards of utility, feasibility, propriety, and accuracy will be followed. The *Logic Model*, Appendix G, provides a roadmap to guide/assess project operations and outcomes. In keeping with this model, the *Detailed Project Evaluation Plan*, Appendix G, represents a reverse mapping procedure starting with the three project goals, and then identifying formative and summative assessments designed to measure specific objectives that address goals/priority with specific, measurable, attainable, and relevant goals, objectives, activities, and research, presented in a timely manner. It depicts evaluation questions, objectives, personnel responsible, data collection methods/sources and target dates.

The project will also benefit from the systematic evaluation plans and procedures employed by educators within OCPS and UCF to assure sustainability by leveraging non-project resources and assuring compliance with FDOE measures for certification and licensure. Ongoing

evaluation consists of measurement at regular intervals of student recruitment and retention, competency acquisition, student and staff satisfaction with program operation, and performance in clinical experiences for a year and during induction (2 years). Instruments and procedures designed specifically for the CCEI's programs are used to collect data from a variety of sources. Data are used as input for decisions concerning development and modification of courses, programs, and clinical experiences. Program components are considered satisfactory if they meet pre-specified criterion of 85% effectiveness; faculty review any components that fall below that criterion to identify existing problems and potential solutions. Program faculty, in alignment with NCATE, UCF and CCEI accountability and accreditation systems, developed and continues to implement an evaluation plan and specific tools to measure graduates' impact on P-12 student learning. Comprehensive use of multiple Innovation Configuration Continuums (Reschly, 2009) in multiple EBPs will be integral to goals, objectives, and outcomes, including scholar competencies, through continued formative performance feedback. The *Detailed Project Evaluation Plan*, Appendix G includes graduate follow-up evaluations related to performance on the job and impact on P-12 student outcomes. Dr. Debbie Hahs-Vaughn UCF CCEI, will lead the evaluation team of this project. She is highly experienced as a researcher and school-focused program evaluator. Dr. Hahs-Vaughn will provide four/five days of consultation/month focusing on evaluation of components of this project, including instructional materials and strategies, project evaluation design and enhancements, and content and process reviews. She will provide opportunities to meet with the Project Advisory Committee and Project Partners, as well as Project Staff, and faculty to assure high-quality evaluation. A brief resume and letter of support are in Appendix H and I.

*Formative Evaluation* includes data collection during all phases of project operation to provide

both performance feedback and permit periodic assessment of progress toward achieving intended outcomes. To ensure continuous improvement, modifications in program administration, design and delivery are based upon frequent feedback from all groups of participants, project staff, OCPS and UCF faculty, the Advisory Committee and stakeholders each semester. Ongoing formative evaluations will be conducted to assure progress toward intended project goals and continuous improvement. Evaluation procedures/methods will ensure feedback and continuous improvement in project operations in alignment with assessment and accountability measures and systems at UCF and NCATE to both leverage non-project resources and assure sustainability of project's goals, objectives, and outcomes. Comprehensive monitoring and assessment of project logistics and outcomes consist of data on scholar recruitment and retention, competency acquisition across multiple contexts through the continued use of Innovation Configurations (ICs), teacher and Advisory Committee/ Evaluator satisfaction with course content and delivery; and teacher performance, student impact, and satisfaction with project support including MDs of Excellence. Data collected during all phases of the project (ongoing, monthly, each semester, and annually) will be used for formative evaluation to determine needed changes in program design and delivery to assure achievement of intended outcomes. Changes will be based upon feedback from project staff, project participants, the Advisory Committee and Evaluator. Data will be used to refine logistical procedures, measurement instruments, course content, and delivery methods.

Feedback from these methods and other formative aspects of the evaluation, described below, will be used to refine operational procedures, data collection, program content and delivery, clinic experiences, field experiences/internships, induction and teacher supports.

### *1. Evaluation of Scholar Recruitment, Selection, Progress and Retention*

Data will be collected on (a) scholar recruitment activities; (b) number of applicants applying and qualifying for program admission; (c) number/qualifications of applicants admitted including those from underrepresented groups; (d) scholars' progress and retention through program of study to assure completion and certification/licensure; and (e) scholars' satisfaction.

## *2. Evaluation of Program Competencies, Coursework, Clinical Experiences and Internships*

Data will be collected on (a) competencies and EBPs covered in courses and internship through the continuous use of Innovation Configurations in EBPs; and (b) scholar satisfaction with course delivery, content, and clinical experiences.

## *3. Evaluation of Competency Acquisition*

Prospective teachers and supervising teachers will be evaluated through a competency-based approach with evidence from formative and summative assessments collected from multiple OCPS and UCF sources and reviewed by faculty and project staff continuously to both provide performance feedback and to complete periodic assessment of progress toward achieving intended outcomes through review of teacher competencies that are both specific and measurable. Data will be collected on (a) scholars' progress through the program of study via degree audits each semester; (b) quality of artifacts submitted online to a LiveText portfolio and reviewed by course instructors; (c) scholar demonstration of EBPs in multiple settings; and (d) student outcomes from applied performance assignments and assessment data, as described.

## *4. Evaluation of Project Management/Administration*

The *Detailed Project Evaluation Plan* (Appendix G) is aligned with the *Logic Model* (Appendix G) and includes data collection and analysis to determine if project activities/outcomes are accomplished by projected dates. Project staff will review the Logic Model, management and evaluation plans at monthly meetings and analyze data collected from key stakeholders on the



efficiency/effectiveness of operating procedures related to (a) management of the budget; (b) maintenance of project records; (b) student recruitment and selection; (c) program delivery; (d) advisement/mentoring; and (e) delivery of project supports to site-based participants in HNS.

**Summative Evaluation** will be based on data collected from all operational semesters. Specific focus will be on determining if the project was successful in meeting its goals, objectives, and outcomes and whether it is an effective, cost-efficient, workable special education teacher preparation program, aligned with and sustained through non-project resources and accountability measures within the CEDHP, UCF, and NCATE. Summative evaluation consists of the following schedule of activities and procedures:

*1. Evaluation of Accomplishments of Project Goals*

Data on (a) effectiveness of the project will be collected by means of questionnaires, focus groups, scholar interviews, and classroom observations to determine the extent to which the program operated as intended; (b) competency acquisition data will be collected using existing CCEI and OCPS instruments; (c) the impact of the project on the supply and retention of educators will be collected by monitoring the number of project graduates fully qualified and continuously employed. Annual and Final reports will be generated, submitted to USDOE and used to enhance the curriculum, pedagogy, and program elements including the **Model Demonstration Sites of Excellence** program, clinical/field experiences and internship.

*2. Evaluation of Cost Efficiency of the Model*

Project cost data will be collected via cost accounting procedures, assigning costs to the development of materials or to program operation; project costs per teacher will be analyzed.

*3. Evaluation of Project Impact*

Evaluations of teacher impact are described in the detailed *Project Evaluation Plan* table in Appendix G and described in detail above. Specific measures include data on: (a) employment including type of placement(s), students served, job satisfaction and confidence, and years retained; (b) employer satisfaction and evaluation of graduate and, based upon availability, district determined teacher effectiveness measures and observational data of implementation of EBPs with fidelity; and (c) student outcome data based on teacher work samples and, based upon availability, results from Florida's standardized assessments and iReady.

*Program Modifications Based on Evaluation Data* collected in previous years of preparing teachers were influential in the design of curriculum and instructional delivery, mainly in the areas of EBP, pedagogy, culturally responsive teaching, and mentorship. Past UCF graduates, members of the Advisory Committee, OCPS faculty and administrators, and project partners, along with national experts and state level administrators also made significant contributions in the planning process. See Letters of Support in Appendix I.

*Compliance with Annual Evaluation Requirements.* Co-Principal Investigators and Project staff will prepare an annual report for the federal funding agency that summarizes the following: (a) Progress achieving project goals/objectives/outcomes, documented by a timeline of accomplishments, copies of materials developed, and other evidence; (b) Effectiveness of the project in meeting goals/objectives, documented by summary reports of results from evaluations administered to date; and (c) Impact of persons served by project, documented by a list of scholars admitted, enrolled, and prepared during the project. All GPRA requirements are met.