

Project NURTURE (Network for Urban and Rural Teachers United for Residency Engagement)

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Significance

The issue of teacher retention has persisted for many years (Brownell, Sindelar, Kiely, & Danielson, 2010). The areas of mathematics, science, and special education continue to lack personnel who can supply this demand throughout the nation (allEducationSchools, 2018), and the state of Georgia is experiencing a shortage of mathematics teachers, among others (U.S. Department of Education, 2017), the state of Georgia had shortages of mathematics and elementary teachers for the years 2016-2018. Between 2012 and 2016, the state of Georgia reported persistent vacancies in the areas of Mathematics, Science, and Special Education (Georgia Professional Standards Commission, 2015). This trend has existed for over two decades, and it is more acute for high-need schools and districts. Efforts have been made to provide various entry points to future teachers as a means to develop and fortify the workforce. However, those efforts have not consistently yielded the outcomes of both preparing and retaining well qualified teachers. This is particularly true in the high demand content areas of math, science, and special education (Sutcher, Darling-Hammond, & Carver-Thomas, 2016).

We strive to address these persistent issues through **Project NURTURE** (Network for Urban and Rural Teachers United for Residency Engagement), a multilevel teacher readiness and residency program designed to contribute to the workforce of teachers in the subject areas of middle and secondary math and science and special education in Georgia. Our goal is to establish a series of supports that develop pathways for future teachers. This continuum will begin as early as high school (in partnership with district career readiness programs) and continue through the post-baccalaureate level via teacher residencies. Our desire is not only to develop entry points to the profession, but also to nurture potential teachers, support them as they grow, and surround them with nourishment of mentorship and induction so they can thrive in the places where they

are planted (Holdeheide & Lachlan-Hache, 2019). These teachers would be prepared in urban and rural school districts that have a demonstrated need for highly qualified, fully credentialed teachers.

The purpose of **Project NURTURE** is to offer a teacher preparation program that meets the relevant and critical needs of all our education stakeholders and helps community members who desire to fulfill their dreams to become teachers. For the districts in the **Project NURTURE** partnership, this program fulfills a need by co-creating a model in which new teachers, mentor teachers, and teacher leaders can be developed, fostered, and advanced in multiple ways. First, the district can focus and leverage their resources towards existing, available, and qualified but non-certified staff, thus creating an internal candidate pool that can be supported through job-embedded teacher residencies during their educational preparation. Second, this program will meet a critical need by working in collaboration with the educator preparation provider to strategically place eligible and available teacher candidates within the partnership districts, resulting in a steady and concentrated pipeline of new teacher candidates who will make a three-year commitment to remain employed within the district following the completion of the preparation program.

For communities, **Project NURTURE** meets a critical need by reimagining the roles of existing members (e.g., paraprofessional educators, school bus drivers, library staff). For example, paraprofessionals tend to be community members who provide a stable presence in schools over time and are more likely to represent the demographics of the community context (Chopra, 2018; Darling-Hammond, 2000; Thornton, Peltier, & Medina, 2007). In fact, the superintendent for Douglas County School System, one of our new partnership districts, began his teaching career as a paraprofessional. Leveraging the human resources that are available from

within the community elevates and showcases funds of knowledge that may otherwise be overlooked, particularly in underrepresented communities (Noel, 2016).

For educator preparation programs, **Project NURTURE** leverages existing available resources within the university setting. **Project NURTURE** combines innovative and effective pedagogy and content preparation that is offered by Georgia State University's College of Education & Human Development (CEHD). To date, students completing initial certification in the CEHD's M.A.T. programs in special education, science and math have demonstrated excellence in the national certification experience known as the edTPA and on state certification exams. During the 2015-16 and 2016-17 academic terms, of the 111 GSU candidates who attempted the edTPA in math, science or special education, 110 of the candidates received a passing score. Likewise, 100% of students who attempted the state certification exam in the same areas earned a passing score.

Additionally, **Project NURTURE** will recruit potential teachers from diverse backgrounds, including an innovative model with a specific focus on leveraging the potential workforce of paraprofessionals, who often reflect the diversity of the community. In doing so, we hope to meet the needs of learners who will benefit from schools that are a true microcosm of the diversity in society (Albert Shanker Institute, 2015). Finally, **Project NURTURE** intentionally and systematically integrates elements of wellness and self-care as an essential tool to promote efficacy and effectiveness for individual teachers and as a tool for retention among the teaching workforce, overall (Ansley, Houchins, & Varjas, 2017).

Thus, the primary goal of our proposed initiative, **Project NURTURE**, is to increase the number of highly qualified teachers who are committed to high-need schools (*Goal 1*). Project activities present an exceptional approach to the absolute priority, competitive preference priority

1, and the invitational priority established for this competition: (a) partnership grants for the establishment of effective teaching residency programs, (b) projects designed to improve student achievement or outcomes in computer science by increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, and (c) serving children or students who reside or attend TQP projects schools in a qualified opportunity zone. A comprehensive induction and mentor program, enhanced professional development school partnerships, and collaborative development of parent engagement strategies will complement these initiatives.

To these ends, the **Project NURTURE** partnership consists of **3 public universities** in Georgia (Georgia State University, Middle Georgia State University, Fort Valley State University). Georgia State University will partner directly with Douglas County School district, an LEA just west of Atlanta that is comprised of about 26,000 students and is the 17th largest school district in the state. Middle Georgia State University and Fort Valley State University will partner with **7 LEAs** (Dodge County Schools, Bleckley County Schools, Bibb County Schools, Baldwin County Schools, Houston County Schools, Laurens County Schools, Pulaski County Schools). Three of our eight partner districts support students through state identified Opportunity Zones: Douglas County, Bibb County, and Baldwin County. The estimated number of preservice and mentor teachers to be served through the varied initiatives is 250-300, annually. However, the potential number of inservice teachers impacted through the tailored menu of services, computer science endorsement, and Summer Research Symposium will be much larger across the state.

Strong Project Team. A strong team has come together for the **Project NURTURE** initiative as can be seen by the curricula vitae in Appendix H. Georgia State University grant team members include professors in teacher education programs, a Department chairperson and

Director of the Graduate Certificate in Program Evaluation, Director of the Center for Evaluation and Research Services, and an Associate Dean for School and Community Partnerships. One team member has been an investigator on a grant from Wachovia, titled “Cross Cultural Initiative,” to work on culturally responsive pedagogy for K-12 teachers and has worked for 20 years with the Southern Education Foundation, whose mission is “the equity and excellence in education for all students in the South, particularly low income students and students of color.” Most team members have successfully implemented large-scale federal grants.

Gsu collaborates closely with its partner districts to ensure that candidates are being properly prepared to address school and district needs successfully. In addition to coursework, each candidate participates in a year-long residency which gives the candidate an opportunity to participate in “real work in real time” and demonstrate proficiency in the instructional and teaching standards. A major part of the residency is the development and implementation of action research projects.

Fort Valley State University (FVSU) is a historically Black university and one of the most affordable universities in the country. It is Georgia’s only 1890 land-grant institution and the nation’s top producer of African American graduates in mathematics and related majors in 2 of the past 3 years. FVSU’s College of Education produces highly competent teachers and counselors who are making a difference in the lives of students throughout the region and the nation. In 2017, 100% of education majors passed the state certification exam, and 90% found teaching positions within one month of graduating. FVSU partners with many rural school districts facing teacher shortages, particularly in science, mathematics, and special education.

Middle Georgia State University (MGSU) is Georgia’s newest university after consolidation of Macon State University and Middle Georgia College in 2012. MGSU is located

approximately 85 miles south of Georgia State University and serves a large number of rural school districts throughout middle Georgia. MGSU includes five campuses throughout middle Georgia, and the Department of Teacher Education is continually evolving in new ways to meet the demands today's teachers face on a regular basis.

TQP High-Need Eligibility

High-Need LEAs (Component A) A.1. Table 1 shows the percentage of children served that are below the poverty level in the LEAs that are partners in **Project NURTURE**. These percentages are from the Fiscal Year 2018 REAP Master Eligibility List. Bleckley, Dodge, Laurens, and Pulaski County School districts are RLIS (A.4).

Table 1. TQP High-Need Eligibility: Poverty/Rural Area Requirement

<i>Partner LEA</i>	<i>Below 20% Poverty</i>	<i>Community Category</i>
Baldwin County Schools*	32%	rural
Bibb County Schools*	39%	rural
Bleckley County Schools	30%	rural
Dodge County Schools	38%	rural
Douglas County Schools *	20%	urban
Houston County Schools	22%	rural
Laurens County Schools*	29%	rural
Pulaski County Schools	31%	rural

*Includes one or more Opportunity Zones (Census Tract Numbers: Baldwin, 13009970200, 13009970400, 13009970500, 13009970600, 13009970600, 13009970701, 13009970702; Bibb, 13021010100, 13021010400, 13021010500, 13021011000, 13021011100, 13021011500, 13021012300, 13021012400, 13021012500, 13021011600, 13021011700, 13021011800,

13021011900, 13021013800, 13021013900; Douglas, 13097080201, 13097080202; Laurens, 13175950300, 13175950400, 13175950800, 13175950900.)

Teacher Need (Component B) B.2. The shortage of certified teachers is well documented within the state with overall 2.9% of teachers with emergency, provisional, or temporary certification. The high percentage threshold cited by the U.S. Department of Education is 1.4%, and Georgia is more than twice that percentage. The state superintendent for Georgia, Richard Woods stated that “roughly 44 percent of all beginning public school teachers leave the profession by year five.” A recent *Georgia Trend* article stated that “Enrollment in University System of Georgia schools of education, a traditional source for supplying new teachers, was down by about 14 percent from 2011 to 2015, and the system’s new teacher production declined by about 20 percent for the same period” (Percy, 2016). The article also indicated that the shortage is experienced by every school system in the state. Therefore, the **Project NURTURE** partner LEAs have a high percentage of teachers with provisional or temporary certification and demonstrate teacher need as defined by TQP.

High-Need School Eligibility C.3. Table 2 lists at least one eligible school from each LEA based on their Free or Reduced Price Lunch (FRPL) percentage as recorded by the GaDOE for the 2018-1 reporting period.

Table 2. High-Need School Eligibility

<i>Partner LEA</i>	<i>School</i>	<i>FRPL%</i>
Douglas County Schools	Factory Shoals Middle School	72.07
Baldwin County Schools	Oak Hill Middle School	92.86
Bibb County Schools	Howard Middle School	>95.00
Bleckley County Schools	Bleckley County Middle	58.15
Dodge County Schools	Dodge County Middle School	66.96
Houston County Schools	Thomson Middle School	65.20
Laurens County Schools	East Laurens Middle School	84.98
Pulaski County Schools	Pulaski County Middle School	82.12

Needs Assessment

The primary goal of the **Project NURTURE** program is to increase the number of highly qualified teachers in high-need content areas who are committed to high-need schools and are equipped with tools of wellness and self-care that would contribute to the likelihood that these teachers would remain in the field for a career. To accomplish this goal as a part of the TQP grant competition, we met with stakeholders from our existing Professional Development School (PDS) partnership structure to reflect on the elements of the collaboration that were critical to its success. These stakeholders included university leaders, such as Associate Dean for Partnerships; research-evaluation leaders, department chairs, faculty leaders; P-12 district leaders (i.e., superintendents or their designees); and leaders from curriculum, research/planning, and professional learning within partner districts. From these meetings, we were able to identify new and continuing areas of need in which the new partners wanted to garner support for professional development and teacher preparation. Thus, we engaged new partners, designated as the **Project**

NURTURE Advisory Council, with whom the **Project NURTURE** program will focus, to determine the existing and anticipated needs related to professional development and teacher workforce development. Collectively, those areas included STEM teacher residencies; special education (co-teaching and inclusion); development of high quality mentor teachers; and the innovative impact of school climate and teacher wellness on retention. Further, all the school systems expressed an extreme interest in the Paraprofessional-to-Teacher model, especially Douglas County whose superintendent began his own teaching career as a paraprofessional.

GSU was recently featured for achieving notable graduation outcomes for traditionally marginalized groups of students (Fausset, 2018). Although the state of Georgia does not rank teacher preparation programs, GSU is ranked third in production of teachers and ranks first for diversity. According to the Georgia Professional Standards Commission, GSU is among the highest performing teacher preparation programs in the state. Moreover, the College of Education and Human Development was recently ranked top 50 in the *U.S. News & World Report* ranking of the top Colleges of Education in the Country. Without a doubt, GSU, MGSU, and FVSU produce diverse graduates and desirable teachers. In general, research shows teacher residencies recruit and retain more diverse and highly qualified educators (Guha, Hyler, & Darling-Hammond, 2016).

Building Capacity. Based on the information gathered from our partners, we have designed several elements of this project to contribute to capacity building, including targeted placements of teacher residencies, the Paraprofessional-To-Teacher (PTT) residency program, and professional development (Goals 1, 5, & 6). This process will contribute new educators to communities in which they have familiarity with the cultural and local assets (Chopra, 2018). In our partnership meetings, districts expressed an interest in implementing a collaborative PTT

residency model where the districts continue to pay the paraprofessional during the residency year, which effectively institutionalized and sustains the residency model. Recruiting candidates through a pool of classified staff who are already employed within the district will provide a steady and robust pool of candidates who may be eligible for either the Resident Readiness Academy (RRA) or Teacher Residency entry point in the **Project NURTURE** continuum. This may also attract candidates from outside the system who are willing to complete the service obligation within the district.

System Improvement. Teaching residency programs align with new requirements that are outlined by the Georgia Professional Standards Commission and the Georgia Department of Education (GaDOE) that will require all teacher candidates to participate in an opening and closing school experience. This new requirement creates an opportunity to situate a well-designed teacher residency into the regular teacher preparation and induction process in Georgia. With **Project NURTURE** we will be able to demonstrate the efficacy of the teaching residency model, potentially leading to a statewide reform of teacher preparation practices and standards (Goal 8). This would reflect a move towards institutionalization and sustainability.

High-Need Fields. **Project NURTURE** is a data-driven initiative that will offer resources to address the needs of our new partners and learners by preparing high-quality, new teachers and bolstering the existing workforce through targeted professional development. **Project NURTURE** also will address teacher preparation in special education, science and math content areas. This effort will address a persistent and ongoing issue that exists in the teacher workforce within the state of Georgia. According to the most recent Georgia Public Teacher Workforce Status Report (Georgia Professional Standards Commission, 2015), the highest rates of attrition occur amongst math and science teachers in the state. For example, 44.4% of math

teachers and 41.5% of science teachers hired in 2010 were no longer among the certified personnel in 2015. A similar trend was evident among teachers hired to work in high schools located in high poverty school districts. Of those hired in 2010, an attrition rate of 44.6% was reported among that group by 2015. For special education, the cumulative attrition rate from 2010 to 2015 was 31.8%.

Project NURTURE will address this need by maintaining a specific focus on producing teachers in a high needs context in the specific content areas of math, science, and special education. This will be of specific benefit to the schools, particularly those in the opportunity zones, within the partner districts which serve high rates of students who qualify for free or reduced priced lunch (63%). Based on state data, these schools would likely experience higher rates of teacher attrition, particularly in shortage areas (Sutcher et al., 2016). These districts will also benefit from the residency model of the **Project NURTURE** program as those teachers will be uniquely prepared to meet the needs of the STEM and initiatives that are featured in schools within the districts.

Project NURTURE will support the development of preservice and in-service teachers to meet the apparent needs among learners in the areas of STEM and Special Education.

Project Design

Project NURTURE is designed to accomplish the following goals and objectives with the purpose of recruiting, developing, and retaining teacher candidates and mentor teachers in high needs, shortage content areas in underserved schools. *Opportunity Zone Schools* will be given priority for receiving residents, professional development, and PLC support.

Goal 1: To increase the pool of highly qualified teachers in high needs areas in urban and rural school districts.

Objective 1a: Recruit and enroll 9 residents (year 1), and 13 (years 2-5) in the urban **Project NURTURE** (GSU) teacher residency program.

Objective 1b: Recruit and enroll 17 residents (year 1) and 24 (years 2-5) in the rural **Project NURTURE** (FVSU/MGSU) teacher residency program.

Objective 1c: Increased student achievement in Project NURTURE classrooms on multiple-choice tests using AAR.

Goal 2: To create a pipeline for recruiting teachers through district CTAE programs and future teacher academies.

Objective 2a: Develop the infrastructure and implement 3 Academy for Future Teachers (AFT) Summer enrichment programs for three different partnerships.

Objective 2b: Recruit and enroll 30 to 60 participants in each of the AFT summer enrichment programs annually depending upon location.

Goal 3: To create a pipeline for teacher certification for paraprofessionals in the rural district

Objective 3a: Provide two “onboarding” sessions to recruit potential paraprofessional residency candidates annually.

Objective 3b: Provide a Summer Research and Teacher Readiness Residency Summit to provide professional development to emerging residents, current residents, mentor teachers and in-service teachers, along with the stakeholders who support them.

Goal 4: To establish a residency readiness pipeline for undergraduates who lack prerequisites towards initial certification and/or graduate MAT admission.

Objective 4a: Annually, provide academic coaching for 9 pre-baccalaureate students who are missing at least 2 prerequisite requirements for admission to the teacher education program in the metro **Project NURTURE** site.

Objective 4b: Annually, provide academic coaching for 15 pre-baccalaureate students who are missing at least 2 prerequisite requirements for admission to the teacher education program in the rural **Project NURTURE** sites.

Goal 5: To develop an induction support model that aligns and bolsters the district initiative and contributes to the development of a state-wide model.

Objective 5a: Produce and implement a web-based induction support series that will be implemented with each graduating teacher residency cohort.

Objective 5b: Measure the perceived efficacy of the induction support series with program completers two years following program completion.

Goal 6: To develop a professional learning community model that contributes to the acquisition of coaching and mentoring skills of cooperating teachers and mentors to support residents.

Objective 6a: Provide 3-day training on cross-career professional learning communities to mentors and leaders in the partner P-12 schools two times annually for metro and rural schools.

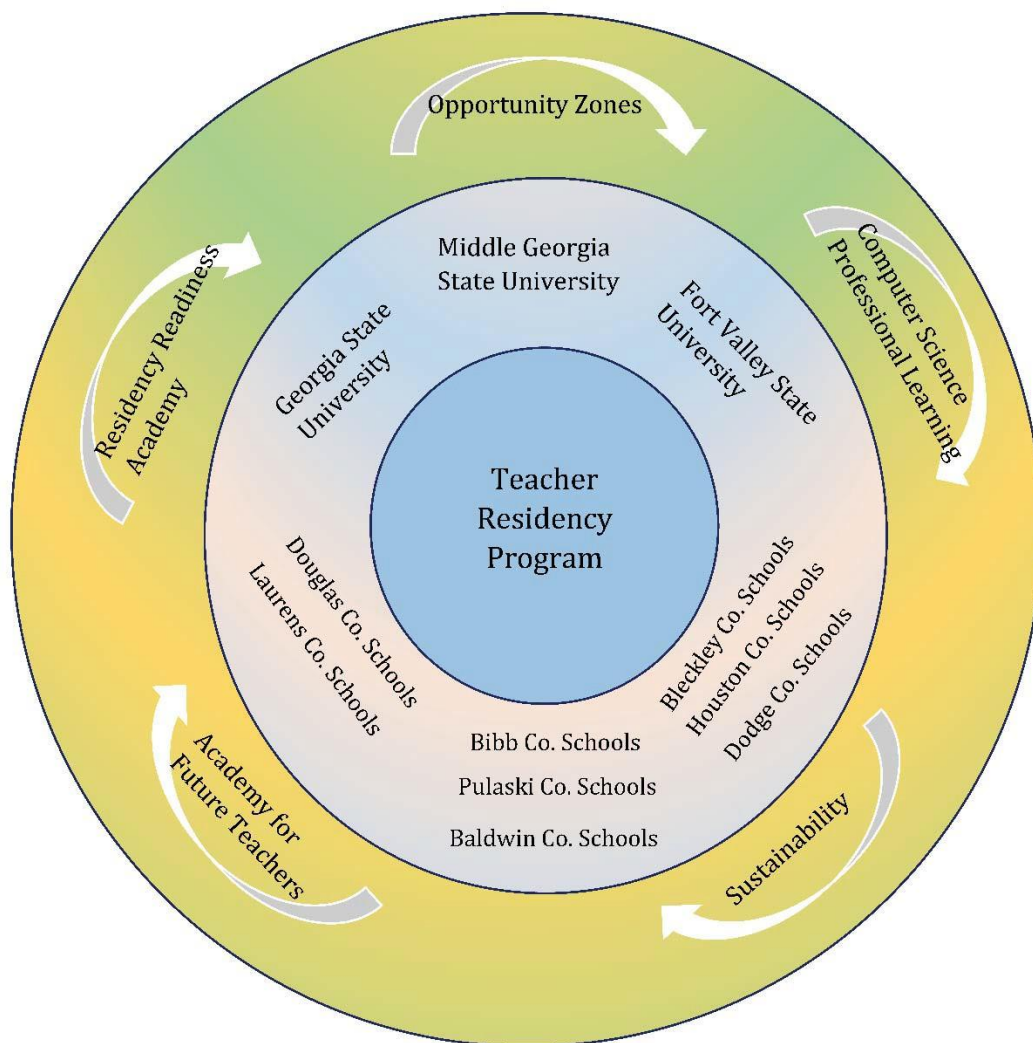
Objective 6b: Provide ongoing follow-up coaching to cross-career PLCs four times per year for metro and rural teams.

Objective 6c: Increased CCRPI scores and School Climate ratings for Project NURTURE schools compared to matched comparison schools.

Goal 7: To create a pipeline of well-prepared mentor teachers to support future teacher candidates in the district.

Objective 7a: Identify a pool of potential mentor teachers within the partner districts.

Objective 7b: Implement mentor development modules with mentor teachers annually via 4 hybrid professional development sessions.



Goal 8: To develop computer science web-based training modules and implement a computer science endorsement program that emphasizes computational and algorithmic thinking, cybersecurity, problem-solving, and course integration.

Objective 8a: Produce and implement a web-based computer science training module series that will be available to all residents, preservice and in-service teachers, and university faculty participating in the state of Georgia.

Objective 8b: Produce and implement a computer science endorsement (CSEnd) program that will be available to Project NURTURE residents, mentor teachers, and teachers in the state of Georgia.

Objective 8c: Measure the efficacy of participants who complete CS training modules two years after program completion.

Objective 8d: Measure the efficacy of participants who complete the CSEnd two years after earning the endorsement.

Goal 9: To present this design as a model that fulfills state requirements that all teacher candidates participate in a school experience.

Objective 9: Meet with **Project NURTURE** advisory board twice per year to align grant elements with changing state initiatives.

Project NURTURE will provide various entry points towards developing and sustaining teacher candidates to contribute to a diverse and student-ready workforce in high needs areas in the state of Georgia. This effort will address a persistent and ongoing issue that exists in the teacher workforce within the state of Georgia. According to the most recent Georgia Public Teacher Workforce Status Report (2015), the highest rates of attrition occur among math and

science teachers in the state. Thus, the need for developing innovative preparation programs is clear. As such, **Project NURTURE** will include establishing a teacher pipeline through the following initiatives: (1) Academy for Future Teachers; (2) Residency Readiness Academy; (3) Innovative Teacher Residency Programs; and (4) Mentor development programs.

Academy for Future Teachers. The Academy for Future Teachers is designed for bright, talented, and diverse high school students seriously considering a career teaching math or science in an urban environment or a math or science career. This initiative will be one of the first entry points in the teacher recruitment and preparation continuum that will be implemented through **Project NURTURE**. At AFT, students collaborate with public school teachers and university faculty as they develop teaching skills, go on field trips, and build an appreciation for the value of professional and academic preparation. Math and science concepts are reinforced as participants practice presentation skills which they use every week when they teach real students. AFT provides these opportunities through an intensive 3-week experience that nurtures the skills and interests. Three AFT programs will be offered through **Project NURTURE** each year (Goal 2; Obj. 2a) with the metro AFT including an emphasis on computer science, algorithmic thinking, cyber security, and problem solving (Competitive priority 1).

Residency Readiness Academy (RRA). The RRA is the second entry point in the teacher recruitment and preparation continuum that will be implemented through **Project NURTURE**. The RRA designed to prepare individuals who have associate degrees to enter the teacher residency master's degree program once they have completed their bachelor's degree (Goal 4; obj. 4a & 4b). During the applicant's previous grant implementation with rural partners, our team learned there are a limited number of potential candidates currently holding bachelor's degrees and ready to enter the residency program. The RRA will provide an opportunity to

prepare select individuals in rural school districts with less than a bachelor's degree to enter and complete the teacher residency program.

We will provide coursework, coaching support, and financial aid counseling to sustain applicants in the program for the duration. The expectation is that students will complete their bachelor's degree in a STEM discipline through one of the university partners. During the transition to the residency program, they will complete their initial certification, along with their master's degree within up to an additional 18 months. These select teacher candidates will be teachers of record within 3 years and 6 months or less.

The RRA also provides opportunities for sustainability beyond the life of the grant as school districts invest in hiring residents as salaried paraprofessionals and teachers with provisional certificates. University partners will seek institutionalization of the model through possible tuition remission through graduate research assistantships, state funding, and local foundation funding. The RRA Model will also be presented and discussed with the GaDOE as well as with local and state legislatures (Goal 9). The RRA Model will support Georgia's effort to address severe shortages in many rural high needs districts.

Teacher Residency Program. The Teacher Residency program is the third entry point in the teacher recruitment and preparation continuum that will be implemented through **Project NURTURE** and represents the hallmark component of the program (Absolute Priority 1). Residencies will allow preservice teacher candidates to develop as teachers over the course of an academic school year in a supportive and collaborative cohort. The cohort will be comprised of residents who are paraprofessionals from the partner district(s) who are participating in the new Paraprofessional-to-Teacher model and candidates from the traditional teacher preparation program.

For the Douglas County Schools component of the **Project NURTURE** initiative, we will support nine residents during year 1 and thirteen residents during years 2-5. During year 1, four of the residents will participate in the standard residency model in which they are placed in the district with a mentor teacher for an academic school year. During years 2 - 5, eight will participate in the standard residency model. During years 1-5, five residents will be chosen each year to participate in the Paraprofessional-to-Teacher (PTT) model, where they complete their experience in the special education classroom where they working. In the rural setting, during year 1, seventeen teacher residents will be selected and during years 2-5 twenty-four residents will be selected each year and participate in the PTT model. This will add a total of 17 teacher residency candidates during year one and 24 each year during years 2-5 for a total of 174 Teacher Residents over the course of the project.

The **Project NURTURE** Teacher Residency framework integrates co-teaching and a strong cohort structure based on the foundation of school-based professional learning communities. Residents will work with district and university faculty to develop and maintain a professional learning community that will meet bi-weekly. This model was implemented with teacher residents in the previous TQP grant (CREST-Ed). TQP faculty identified a need for professional development that supported collaboration and communities of learning. As such, this initiative was translated from a practice primarily used with in-service teachers to one that was implemented with preservice teacher residents to support their development. This model will continue to be used within **Project NURTURE** because it has shown itself to be valuable in contributing to the successful development of teacher residents (Kesner, Collier, & Meyers, 2003). We will continue to integrate this practice and to use this structure to support the completion of national certification requirements (ie., edTPA).

Professional Learning Community (PLC) structure. The **Project NURTURE** Teacher Residency cohort structure enables residents to learn through collaboration (Kesner, Collier, & Meyers, 2003) and co-teaching (Bryant-Davis, Dieker, Pearl, Kirkpatrick, 2012; Graziano & Navarrete, 2012) with highly qualified, experienced mentor teachers. These PLCs provide a nurturing and supportive professional environment in which residents and mentors work together to reflect on their own practice, their students' work, and their beliefs about teaching and learning as a mechanism to develop professionally and to use their human and material resources effectively. **Project NURTURE** residents and faculty will be supported in developing these professional learning communities by nationally recognized facilitators during initial training and throughout the course of the residency experience through 3-day trainings and follow-up coaching (Goal 6, obj. 6a & 6b). The collaborative cohort structure of **Project NURTURE** is focused on research-driven methodology, formative assessment, problem-based instruction, and evaluation. Through the cohort structure, the residents have opportunities to share their successes, concerns, and questions with peers, alumni, and mentor teachers. The impact of the PLCs may be captured through increases in the CCRPI score and/or increases in the school climate ratings (Goal 6c; see evaluation plan).

Coursework. Throughout the full academic year, residents progress through rigorous, research-based, and fully accredited master's-level coursework to enrich their learning. The content focus of the course work will include middle and secondary level math, science, and/or special education. Students who are admitted to **PROJECT NURTURE** will complete a five semester (18 month) program of study in either of the following content areas: Math Education (middle level or secondary), Science Education (middle level or secondary), or Special Education (K-12 certification with a reading endorsement). Each of these programs consists of

course work that develops knowledge, skills and dispositions necessary for teacher candidates to develop the content and pedagogy necessary to support the diverse learning needs of the students in the districts where they will complete their residencies, and ultimately work as teachers of record. Students will take about three classes each semester. Each program requires candidates to complete 36 hours of coursework, including at least two, semester-long practical experiences. For those candidates who are admitted into the **Project NURTURE** teacher residency program, the practical experiences will be satisfied during the year-long placement.

Several courses will offer site-based instruction, virtual/hybrid web-based instruction, co-instruction by P-12 educators, and co-instruction with special education faculty. Residents will benefit from authentic learning with educators who are experienced in content area instruction, instruction for English Language Learners, and special education. Courses will emphasize pedagogical approaches that are grounded in research, that reflect high leverage practices (McLeskey et al., 2017) and that are supported by inquiry and formative assessment. In addition to coursework, the Teacher Residents will receive computer science professional development from an expert faculty member. Teaching proficiency will be evaluated using the Teacher Keys Effectiveness System (GaDOE, 2013).

Recruitment of teacher residents. One of the many innovations of **Project NURTURE** will be the recruitment of Teacher Residency candidates from existing pools of non-certified school-based employees (i.e., paraprofessionals) to establish a Paraprofessional-to-Teacher (PTT) model. This variation on a traditional Teacher Residency model leverages the human resources that are available within the district as a highly skilled pool of teacher candidates. In addition to being skilled in areas that are often shortage areas (i.e., special education), paraprofessionals tend to be a stable presence in schools over time and are more likely to

represent the demographics of the community context (Chopra, 2018; Darling-Hammond, 2000; Thornton et al., 2007). Additionally, recruiting individuals from underrepresented populations to teach in high need partnership schools, rural communities and teacher shortage areas will be emphasized. Recruitment will focus on mid-career professionals from other occupations, former military personnel, and recent college graduates with a record of academic distinction. Partner districts will assist with recruitment through their various communities and communication resources. At least two information and recruitment sessions will occur annually (Goal 3; obj. 3a).

Interview and Selection. All candidates who meet admissions requirements for the respective initial certification preparation programs at partner institutions (GSU (MAT), FVSU (BSE), and MGSU (MAT and BSE)) will be invited to take part in the **Project NURTURE** Teacher Residency interview process. Applicants must demonstrate the following requirements to be considered: (1) Strong content knowledge or record of accomplishment in the field or subject area to be taught (as documented by an undergraduate degree in an associated content area and/or equivalent experience); (2) Strong verbal and written communication skills (as demonstrated by performance on appropriate evaluations, e.g., state program admissions assessment, writing samples, and application material); and (3) rigorous interviews (as measured by ratings on interview rubric). Official college and university transcripts will be evaluated to determine whether each applicant satisfies content area requirements for admission and applicants must also submit *appropriate* letters of recommendation. P-12 representatives and **Project NURTURE** faculty will interview Teacher Residency applicants. Admission decisions will be communicated by early May, and required coursework will begin in June.

Terms and conditions. A significant portion of funds in the budget for **Project NURTURE** will go towards directly supporting Teacher Residents in the form of tuition remission, living wage salaries, and/or stipends. Tuition remission will occur in the fall and spring semester of the residency assignments. This will be provided by the university with which the **Project NURTURE** resident is affiliated (i.e., Georgia State, Fort Valley State, and/or Middle Georgia State University). Depending on the partner institution, tuition remission will occur through a waiver or a tuition credit. The **Project NURTURE** teacher resident stipend will vary depending on the status of the resident. For the 4 teacher residents who are part of the traditional model in the metro-Atlanta schools, they will receive a living wage salary stipend of \$25,000 for a period of one year. The 20 residents who will participate in the Paraprofessional - to-Teacher model through the Georgia State, Fort Valley State, and/or Middle Georgia University will receive a \$5500 stipend for tuition use along with the compensation that is allocated to them through their paraprofessional positions in the district, in addition to the tuition remission.

The application for salary will satisfy the federal grant and university/state requirements as follows: (a) The applicant must provide proof of U.S. citizenship or be a permanent resident; (b) The applicant must agree to a service obligation to serve as a full-time teacher for a minimum of 3 academic years immediately after successfully completing the 1-year teaching residency program; (c) The teaching resident must fulfill the teaching requirement in a high-needs school and teach a subject or area that is designated as high need by the partnership and submit verification of his or her teaching and the preceding requirements with the district; (d) Each year of service, the teaching resident must provide the partnership an official certificate (verified by the LEA's chief employment administrative officer for service at the beginning and/or

completion of each year or partial year of service); (e) The certification and graduation components of the programs must meet or exceed the requirement of being highly qualified teachers and the service obligation will not begin until residents become fully certified teachers; and (f) The applicant must comply with the requirements set by the partnership if the applicant is unable or unwilling to complete the service obligation. Should a teaching resident not meet the service obligation, the interest rate that applies to repayment of all scholarship support will be “the prevailing rate [established by the U.S. Treasury] at the time a repayment schedule is established.” Any repayments will be used to carry out additional activities of Project NURTURE. Coordinated induction efforts will be put into place for both residents and teacher education graduates following the successful completion of their preparation programs. Participation in induction efforts will be required and will occur through web-based modules that will be developed through Project NURTURE (Goal 5, Obj. 5a).

High quality mentor recruitment and development. High quality mentoring has been cited as a critical supportive component of teacher retention, particularly in high needs content areas (Callahan, 2016; Gray, Sohela, & O’Rear, 2015; Ingersoll & Strong, 2011). **Project NURTURE** Teacher Residents will be supported by highly qualified mentors who will be rigorously selected and trained (Goal 7). A University Liaison/faculty member with a content specialization in mathematics or science will collaborate with mentors in partnership schools to ensure that classroom clinical practice is tightly aligned with coursework. The **Project NURTURE** Teacher Residency mentor training will include reviewing the needs and development of residents, examining cases, problem-solving, responding, and exploring ways to develop collegial relationships with constructive feedback. Additionally, mentor teachers will serve as the content experts for Teacher Residents and University supervisors when each Teacher

Resident's teaching is evaluated. This role recognizes the expertise that the mentor has acquired through their years of experience and elevates them as teacher leaders within their schools. The teacher leader role also allows the opportunity for **Project NURTURE** mentor teacher to be rated at the highest level of performance on the state teacher evaluation system (i.e, GA Teacher Keys Effectiveness System, TKES).

The mentoring model that will be used in the **Project NURTURE** initiative will start with a systematic selection process, an ongoing needs assessment, and year-long professional development seminars (obj. 7a). In the selection process, each mentor will be required to (a) hold a valid, renewable teaching certificate; (b) have at least 3 years of successful experience in his or her subject area; (c) have a solid content knowledge of the current curriculum and related assessment measures; (d) demonstrate outstanding instructional skills and technology use; (e) model effective interpersonal and communication skills with colleagues and families; (f) demonstrate effective classroom management practices in inclusive settings; and (g) collect and use data for instructional decision-making. Upon identifying potential mentors who meet these criteria, we will guide them through a needs assessment that will illuminate areas that they feel could contribute to their growth and will demonstrate their capacity to participate in activities related to the project, and they will commit the necessary time and resources to honing their own skills and to mentoring a preservice teacher. Identified mentors are also expected to serve as teacher leaders of the residency program and teacher coaches during the induction program for the partner school. They may also be asked to lead a PLC where collaboration among and between colleagues will be used to improve instruction. Mentors will receive a stipend and release time for these extra duties.

Mentors will meet four times per school year at a local school site. **Project NURTURE** faculty, district/state affiliates, or recognized leaders with relevant expertise in the field will facilitate these sessions. Sample session topics are instruction using high leverage practices (McKelskey et al., 2017), inclusive practices with an emphasis on universal design for learning (UDL) differentiated instruction, and models of co-teaching. The mentor teacher professional development sequence will include a bi-monthly meeting for a 2-hour session (obj. 7b). Sessions will be offered in a hybrid format which will include both face-to-face and online components.

Mentors and Teacher Resident will also work together to develop as educational researchers as they work together to implement the Anchor Action Research (AAR) project during the residency year (Goal 1, obj 1c.). Elements of this research support will include: using data for decision making; understanding and designing effective formative and summative assessment; and factors influencing fidelity in testing and instruction. Participation in the AAR project process helps to prepare the resident for certification requirements through project construction, data collection and data analysis. Additionally, the AAR process has been noted to support positive academic outcomes for learners in which this process occurred with fidelity (Benson, Curlette, Ogletree, & Hendrick, 2017).

Evaluation of the mentor professional development series will be two-fold. First, mentors will provide feedback that will include review and reflection on program efficacy, recommendations, implications for program scale-up, and sustainability. Second, to promote reflection and continued professional goal setting, mentors will develop individual growth goals and benchmarks that can be supported by **Project NURTURE** faculty into future academic terms. The ongoing needs assessment will include a mutual determination of need in which the mentors state the gaps in their professional development that will help them become more

successful in their mentor leadership and in their delivery of instruction. This structure will be beneficial to mentor teachers as they demonstrate their capacity as teacher leaders and as they have the opportunity to be evaluated through the state evaluation system. This will contribute to the sustainability of this professional development structure within the partner districts and, potentially, statewide (Goal 9).

Induction initiatives. The need for well-coordinated and systematically implemented induction is well-documented in the professional literature (Holdeheide & Lachlan-Hache, 2019). As **Project NURTURE** residents enter the classrooms as teachers, they will receive continuous support from CEHD and the teacher preparation programs at FVSU and MGSU. Induction is a requirement by the Georgia Professional Standards Commission and the University System of Georgia. There continues to be a common and frequent need expressed by candidates, graduates and faculty across programs for a more comprehensive and intentional induction plan, which can offer meaningful, generative, and context-/need- specific support for teachers in our community, whether they have graduated recently from one of our programs or decades ago in another state. **Project NURTURE**'s induction plan will support teacher candidates for 3 years beyond graduation (Goal 5; Obj 5a & 5b). During their final residency year, candidates will work with a district coordinator, who will support them as they complete the edTPA evaluation process, participate in PLCs, and establish effective learning environments upon successfully securing professional teaching assignments. These supports will be available to all candidates who are placed in high-needs partnership schools. GSU will support these global efforts through the Professional Education Faculty (PEF) structure, a collaborative body between the College of Arts and Sciences and CEHD that represents all teacher preparation programs within the university. The PEF structure includes oversight of teacher preparation,

including course content, pedagogy, clinical practice and induction. Formalized induction processes will include monthly gatherings, both face-to-face and virtual, that will address topics, such as selecting and implementing evidence-based practices, working with diverse student populations, collaborating with colleagues effectively, and developing sustainable resources for student achievement.

Faculty who participate in facilitating this process will include district content liaisons with release time and workload credit, who work with the school districts to support induction. They will work with local school administrators to identify veteran teachers who can support the GSU teacher candidates as they enter into their first 3 years of teaching. The induction plan includes creating a sustainable structure beyond the **Project NURTURE** initiative. Establishing this robust network of teacher leaders will support our candidates as they develop professional capital (Hargreaves & Fullan, 2013). Additionally, this process will allow candidates to develop skills that will make them successful within the state's new tiered certification system in which teacher leadership is an essential skill to matriculate towards more advanced certification levels. The High Quality Mentoring and Induction initiatives within Project NURTURE include features and components that are consistent with research, such as problem solving, implementing literacy programs, and incorporating essential components of mathematics, science, and reading instruction. These skills and initiatives yield positive effects towards the retention of new teachers based on the standards of the What Works Clearinghouse (American Institutes for Research, 2019b).

Management Plan

In preparation for the submission of **Project NURTURE**, members of the partnership have communicated virtually and in person to discuss various components of the project and the

team's desire to seek supplemental funding. Official **Project NURTURE** planning activities will begin in July 2019. In the paragraphs below, the following abbreviations are used to identify which priorities are addressed by program goals, objectives, and activities: **AP** (Absolute Priority–Teacher Residency Programs); **CPP1** (Competitive Preference Priority 1– Computer Science and Rigorous Instruction in STEM Fields); and **IP** (Invitational Priority– Serving Students in Qualified Opportunity Zones). For each item in the management plan, the narrative identifies the specific activity, the associated priorities (in bold), the individuals responsible, the key participants, and the expected outcomes or rationale.

SUMMER 2019 (planning period)

1. Convene members of Project NURTURE's Advisory Board and Planning Committee (**All Priorities**). Dr. Benson will call together Advisory Board members and Project NURTURE team members to (a) clarify proposal requirements, (b) determine key stakeholders at the state level, (c) coordinate future partnership meetings, (d) review and finalize plan to launch Project NURTURE.
2. Host luncheon meeting with area P-12 partners, higher ed. administration across the three universities and Grant Advisory Board (**All Priorities**). Drs. Benson and Ogletree will call together P-12 school partners and universities' administrators to (a) review lessons learned from previous grants, (b) gain interest and input for next steps, and (c) determine commitment to sustainability of Project NURTURE initiatives.
3. Conduct and host meeting with Regional Education Service Agencies (RESAs) and school superintendents or designees (**All Priorities**). Dr. Benson will call together Advisory Board members, P-12 partners, university faculty/administrations, and RESA representatives to

(a) review TQP grant award and (b) discuss district needs, including professional learning activities for teachers and leaders

FALL 2019 (Year 1 implementation period)

The Key Project Milestones to be addressed during the initial implementation year are (Goal 8.Objective 8.a) Establish, organize, and meet with all committees and councils; (Goal 1. Objectives 1a,1b,1c) Recruitment activities for Traditional and Paraprofessionals to Teacher Resident Positions; Select implementation and control classrooms, and (Goal 7. Objective 7a, 7b) Identify and on-board mentor teachers; (Goal 2, 2a, 2b.) Plan Academy for Future Teachers; (Goal 3, 3a, 3b.) Refine pipeline for paraprofessional to residency model; (Goal 4, 4a.b.) Develop RRA Model, (Goal 5, 5a. 5b.) Develop Induction Support Model; (Goal 6, 6a, 6b, 6c) Refine CCLC Training; (Goal 1 Objectives 1a, 1b, 1c) Select Residents and mentor teachers for Year 2 Cohort; and Collect data on student learning.

1. Select members for all Project NURTURE councils & working committees: Project NURTURE Advisory Council(s), design teams, research-evaluation team, university liaison committee (**All Priorities**). Drs. Benson and Patterson will facilitate with P-12 partners, university faculty and partners, and community partners to ensure that each partner will have at least one member on the Advisory Council and that all other committees and teams will include appropriate representation from P-12 and university faculty/staff.
2. Schedule and host meeting with Project NURTURE councils & working committees: Leadership Consortium, Advisory Councils (including representation from all members of the partnership), design teams, research-evaluation team, university liaison committee (**All Priorities**). Drs. Benson and Patterson will work with P-12 partners, higher education faculty, community partners, and project investigators to (a) refine grant implementation plan

and timelines, (b) to hire project staff, and (c) to establish roles and responsibilities of various working committees.

3. Prepare marketing materials for recruiting traditional residents and paraprofessionals to teacher residents both urban and rural (**All Priorities**). The Project Director and Drs. Patterson, Benson, and Feinberg will work with P-12 partners, university faculty, and project staff to prepare, discuss, and disseminate recruitment materials for recruitment of applicants.
4. Work collaboratively with school districts & universities to select teacher residents from participating high need districts (**AP, IP**). The Project Director and Drs. Benson, Patterson, and Feinberg will work with University partners and LEA partners to review residency applications and agree upon placements.
5. Work collaboratively with school districts & universities to plan Summer AFTs (**AP, CPP1**). Dr. Benson and Ms. Forstner will work with University partners and LEA partners to plan AFT programs for summer 2020.
6. Refine procedures for RRA implementation (**AP**). The Project Director and Dr. Lemon-Smith will work with University partners to complete RRA plans.
7. Begin development of Induction Support Model (**AP, CPP1**). The Project Director and Drs. Benson, Patterson, and Feinberg will work with University partners and P-12 partners to create a first draft of the Induction Support Model.
8. Refine Procedures for CCLC Training across all sites and develop plan for Computer Science PL integration (**AP, CPP1, IP**). Drs. Benson and Patterson will work with P-12 partners and project leadership team to complete a procedural draft for CCLC Training completed and a procedural draft for Computer Science PL.

9. Meet with research directors and human resources directors regarding project implementation **(All Priorities)**. The Project Director and Drs. Ogletree and Hendrick will work with P-12 research directors, human resource directors, and other members of the project evaluation team to gain input from school districts on project implementation and to facilitate the transfer of data to the evaluation team.
10. Recruit university/LEA liaisons with a focus on computer science, math, and science personnel **(AP, CPP1)**. Drs. Feinberg, Patterson, and Benson will work with P-12 partners and university faculty/administrators to recruit personnel for spring 2020 positions.
11. Meet with higher education rural partners to begin planning Summer Research Symposium **(AP, CPP1, IP)**. The Project Director and Drs. Patterson and Benson will work with P-12 partners and university faculty/administrators to determine initial plans for Summer Research Symposium for Mentors, Residents, and Teachers.
12. Collect baseline demographic data residents/students for urban and rural areas. Drs. Hendrick and Ogletree will work with the design team and research committee to analyze baseline data.

SPRING 2020 (Year 1 implementation period)

1. Meet with faculty who will work with Fall Residents **(All Priorities)**. The Project Director, Drs. Patterson, Feinberg, Benson, Sartin, and McMullan, and the university/LEA liaisons will work with university administrators and P-12 faculty to identify faculty for fall 2020 residents.
2. Complete interview and selection of residents across sites **(AP)**. The Project Director, Drs. Benson, Feinberg, Patterson, and the university/LEA liaisons will work with P-12

partners and university faculty to select residents for all teacher residencies across university partners.

3. Complete selection of mentor teachers and school placements for cohort 2 residents. (**All Priorities**). The Project Director, Drs. Benson, Feinberg, and Patterson, and the university/LEA liaisons will work with P-12 partners and university faculty/administrators to create a list of school sites and mentor teachers for fall placements.
4. Collect data on student learning (**All Priorities**). Drs. Hendrick and Ogletree will work with P-12 research directors and higher education research committee to collect quantitative and qualitative data for evaluation.
5. Complete plans for Summer Research Symposium (**All Priorities**). The Project Director and Drs. Sartin, Biek, McMullen, and Benson will work with university partners and P-12 partners to complete Summer Research Symposium plans and begin recruitment.

SUMMER 2020-2024 (Years 1-5 implementation periods)

The Key Project Milestones to be addressed during the Summer Implementation Months Years 2-5 (Summer, 2020, 2021, 2022, 2023) are as follows: (Goal 1. Objective 1a, 1b) Host Summer Research Symposium (Goal 7. 7a, 7b) Facilitate mentor training for host teachers of residents. (Goal 2, 2a) AFT Symposium, (Goal 1, 1c and Goal 6, 6c) Collect and analyze data.

1. Host Summer Research Symposium (**All Priorities**). The Project Director, Drs. Feinberg and Patterson, and the university/LEA liaisons will facilitate all university and LEA participants' attendance at a successful Summer Research Symposium.
2. Facilitate mentor training for teachers hosting residents (**All priorities**). The Project Director, Dr. Patterson, and the university/LEA liaisons will work with P-12 partners and university

faculty to provide training for mentors and facilitate meetings between mentors and residents prior to fall placements.

3. Collect and analyze performance data, feedback, and continuous improvement reviews. (**All priorities**). Drs. Benson, Feinberg, Patterson, Hendrick, and Ogletree will work with P-12 partners and university partners to identify adjustments needed in project implementation and program evaluation and to prepare results for distribution.
4. Host summer AFTs. Dr. Benson and Ms. Forstner will coordinate with P-12 partners and university partners to provide three successful Summer AFT programs for potential future STEM teachers.

FALL-SPRING 2020-2024 (Years 2-5 implementation periods)

The Key Project Milestones to be addressed during the Fall-Spring Implementation Months Years 2-5 (2020-21, 2021-22, 2022-23, and 2023-24) are as follows: Goal 1, 1a, 1b; Goal 2, 2a, 2b; Goal 7, 7a, 7b); (1) Recruitment and placement of teacher residents; (2) Implementation of teacher professional development with focus on Computer Science; (3) Implementation of mentor professional development; (4) Collect data on Anchor Action Research - student learning, participant satisfaction and needed changes. (Goal 2, 2a, 2b) Prepare for upcoming Summer AFT; (Goal 4, 4a,4b) Begin RRA Implementation; (Goal 5, 5a, 5b,) Continuous refinement and implementation of Induction Model; (Goal 6. 6a, 6b) Continue implementation of CCLC training and implementation for sustainability and scale up; (Goal 8, 8a) Continue to work with state agencies and other stakeholders to advocate adoption of models.

1. Have P-12 participating schools identify Menu of Services choices (**All Priorities**). The Project Director will work with P-12 partners and university faculty to help target schools choose from the Menu of Services to identify initiatives for implementation at the schools.

The Project Director will coordinate with Drs. Varjas, Margulieux, and Glebova, the university/LEA liaisons, and P-12 content supervisors to implement the selected initiatives.

2. Recruitment and placement of residents at selected school sites. **(All Priorities)**. The Project Director and Drs. Feinberg and Patterson will work with P-12 partners and university faculty to continue the PDS Model, implement resident training, and collaborate with mentor teachers.
3. Coordinate Training for Mentor teachers **(All Priorities)**. The Project Director, Drs. Feinberg and Patterson, and the university/LEA liaisons will provide training so that mentors are prepared for fall placements.
4. Implementation of ongoing professional development for higher ed faculty and P-12 faculty **(All Priorities)**. Drs. Benson, Feinberg, Patterson, and Margulieux will provide university faculty with professional development to update their knowledge and skills.
5. Collect data on student learning, participant satisfaction, needed changes, teacher retention **(All Priorities)**. Drs. Hendrick and Ogletree will work with P-12 research directors to collect and analyze data for evaluation of student learning, teacher retention, and program implementation.
6. Meet with rural university partners to plan Summer Research Symposium and AFT **(All Priorities)**. The Project Director, Drs. Benson, Sartin, Biek, and McMullen, and Ms. Forstner will work with P-12 partners and university faculty to engage in continuous Improvement of Summer Research Symposium and AFT.
7. Convene Leadership Team Monthly Meetings **(All Priorities)**. The Project Director and Dr. Benson will call together members of the leadership team to receive updates on all project activities and to make changes as necessary.

8. Convene Advisory Council quarterly meetings (**All Priorities**). The Project Director and Dr. Benson will call together members of the Advisory Council to receive updates on all project activities and provide feedback as necessary.

Key Personnel

Dr. Gwen Benson (5.1 FTE), PI, is the Associate Dean for Faculty Development and Community Partnership in the GSU College of Education and Human Development. She has served as PI on multiple large federal grants. Dr. Benson also taught in urban schools and has served as a public school administrator.

Dr. Joseph Feinberg (.125 AY), Co-principal investigator (Co-PI), is an associate professor in the GSU Department of Middle and Secondary Education. During the past 9 years, he has served as Co-PI and Director of Teacher Residencies on two large federal grants and has managed the resident application process with partnership districts. He previously served as university liaison for a high-need partnership school with a focus on math and science. He is founding co-president for PDS-SERVE, which is a regional PDS organization.

Dr. DaShaunda Patterson (.125 AY; .60 SU), Co-PI, is a clinical assistant professor in the GSU Department of Educational Psychology and Special Education. Dr. Patterson has previously served as the project director of a large federal grant. She also coordinates the M.A.T. program in special education.

Dr. Susan Ogletree (5.1 FTE), co-PI, is Director of the Center for Evaluation and Research Services in the GSU College of Education and Human Development. Over the past 16 years, she has worked on many large research and evaluation projects. Dr. Ogletree has consulted with numerous rural and urban schools systems and foundations.

Dr. Robert Hendrick (1.5 FTE), co-PI, is Director of Evaluation for this grant and serves in the GSU College of Education and Human Development as the quantitative methodology advisor for the college, He also works as a research affiliate in the Center for Evaluation and Research Services.

Curricula vitae for these personnel and other personnel identified in the budget are provided in Appendix H.

Competitive Preference Priority 1

Professional Development in Computer Science. An innovative component of Project NURTURE is the Computer Science Endorsement (CSEnd) for in-service teachers, which will qualify the teachers to add computer science to their existing certifications. CSEnd is a year-long, four-course program designed to accommodate our full-time partnership teachers' schedules (see Figure 1). The certification from the Georgia Professional Standards Commission is for grades P-12, meaning that all teachers, from elementary to high school, will be in the same courses. For this reason, the courses are designed to allow the teachers to apply their knowledge in various contexts, depending on the grade band and type of classes that they will be teaching. For example, all teachers will learn the components of computational thinking, but then they will complete an individual project based on a computing tool that they plan to use in their classroom.

The first and second courses will be offered during the Fall and Spring semesters when teachers will be responsible for teaching their own classes. For this reason, the courses will be offered online, so that teachers have more flexibility in when they participate while teaching full-time. Collaborative learning communities and cohort models are planned for the online courses (Duncan-Howell, 2010; Stoll et al., 2006). First, the instructor will host virtual office one day per week. Unlike regular office hours, these will be held online with partnership school classroom,

and the teachers will be encouraged to come and work on their assignments in this environment when they can. Prior to the start of virtual office hours, all participating teachers will attend an orientation meeting so that the teachers can meet each other and the CSEnd instructors. During the orientation, the teachers will learn about the online course interface to reduce anxiety about the online learning environment. The second community-building activity will be discussion boards in the online environment. After meeting each other during the face-to-face orientation, the teachers will stay in communication because many of the assignments will require participation in the discussion boards. The primary purpose of these discussions will be to develop plans for teaching the content that they are learning about in class based on their current teaching experience.

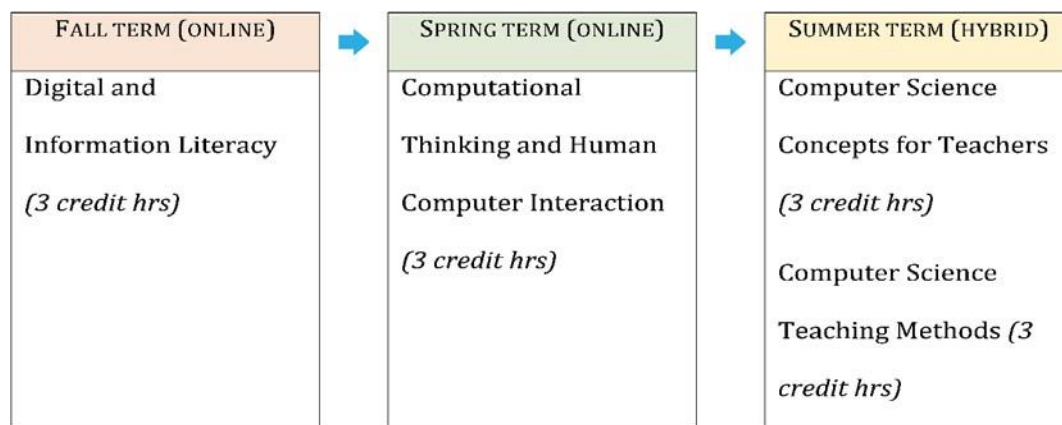


Figure 1. Computer Science Endorsement Program of Study.

The third and fourth course will be offered during the summer in face-to-face/hybrid courses. The short summer semester, which is 7-weeks long with 6 hours of class per week (i.e., 2 hours on MWF) for each course, will be similar to existing bootcamp-style computing teacher preparation programs (e.g., honorCode, Mobile CSP). To help teachers process and work through the content from their computer science concepts course, the concepts course will be taught in the mornings and the methods course will be taught in the afternoon. During the

methods course, the teachers will work through the concepts from the morning again as they explore ways to teach them.

A main source of data collection is the key assessments that the teachers must complete to receive certification. In the **Project NURTURE** CSEnd, there are four key assessments, which correspond to the four courses to measure their general performance. For each assessment, the CSEnd team has developed rubrics to score teachers' content knowledge and pedagogical content knowledge. The first key assessment, for the digital and information literacy course, is an e-portfolio of lesson plans for each of the main topic areas in the course (e.g., creating digital artifacts, modeling data, cybersecurity). The second key assessment, for the computational thinking course, is a computational thinking artifact project that demonstrates at least five computational thinking concepts to produce a product and a plan to implement the project in their classes. The third key assessment, for the computer science concepts course, is a test of programming concepts, which will be administered as a pre- and post-test. The last key assessment, for the teaching method course, is a set of lesson plans for 20 hours of class, including formative and summative assessments that the teachers plan to use. In addition to these once-per-semester assessments, other class assignments will help to track progress through the courses providing several sources of data about both the process and product of learning. Additionally, web based computer science training modules will be produced to provide teachers throughout the state an opportunity to obtain the endorsement and to further support integration of advanced computer science processes across school curriculum for residents, preservice, inservice and IHE faculty members (Goal 8; obj. 8a, 8b).

Sustainability Initiatives

Summer Research Readiness and Residency Summit (SR³S). The purpose of this initiative is to create an annual professional development opportunity for **Project NURTURE** Residents, Mentor Teachers, inservice teachers and partners within the districts. Other residency programs existing within the partner IHEs, such as the NSF Noyce Scholars, will be invited to participate. The Summit will be hosted by the project team at Middle Georgia State University at the Robert R. Hatcher Conference center. This Summit will be the culminating event for each academic year in which various activities will take place including: dissemination of Anchor Action Research Results by current **Project NURTURE** residents and mentors; facilitation of workshops and work sessions related to best practices and effective instruction offered by university and district stakeholders, and orientation of new **Project NURTURE** Residents and Mentor teachers. This Summit is intended to engage about 100-125 stakeholders each summer. Previous iterations of this event have been well-attended and positively assessed by all participants.

Tailored Menu of Services. Through **Project NURTURE**, a tailored menu of services will be offered to principals in participating schools to help support specific initiatives related to STEM instruction with school climate to include anti-bullying training, cybersecurity, digital citizenship, and teacher wellness. The services to be provided on the menu of services were originally determined through analysis of the needs assessment data. These initiatives will be offered in partnership with STEM faculty and experts in Early Childhood and Elementary Education, Middle and Secondary Education, Learning Sciences, and Counseling and Psychological Services programs. A description of these initiatives can be found in Appendix I.

The **Project NURTURE** team will work to institutionalize these efforts throughout the partner districts and universities via state professional development grants and legislative funding.

Program Evaluation

TIP with AAR

The Project NURTURE PLC's work plans build from the Knowledge Arts model (Perkins, 2004) and an anchor action research (AAR) plan with Teacher-Intern-Professor (TIP) groups, providing a strong empirical research base for our model (Curlette, Hendrick, Ogletree, & Benson, 2014). TIP groups provide candidates (interns) an opportunity to develop hands-on teaching skills by working with a K-12 teacher and university professor on a unit of instruction. A new aspect of the TIP with AAR model is incorporating a Science, Technology, Engineering, or Mathematics (STEM) application in the AAR. "The AAR study is a quasi-experimental study using an intern's class (treatment) compared to a comparison class in the same school which is matched on grade level, academic performance, subject, curriculum, ethnicity and gender. Typically, the researcher use propensity scores to establish a match for the comparison condition. The comparison class uses the same curriculum as prescribed by the state as the treatment class. Both the treatment and comparison classes use the same teacher-made pretest and posttest, which are constructed by the TIP group for both classes following the prescribed common curriculum" (Curlette et al., 2014). The AAR studies with Teacher-Intern-Professor groups are anchored in three respects: (1) through common methodology, primarily quasi-experimental designs; (2) through a common overall construct, student achievement; and (3) through attention to participants' inquiry skills and data interpretation ability. The studies are then summarized with meta-analysis, which provides three advantages: a large sample size, increased generalizability of results because of various settings, and ability to examine study characteristics as moderator

variables. An example of a moderator variable may be gender. Male students may get better scores on a math test than female students. In this hypothetical case, gender would be a moderator variable for the relationship of instruction and achievement. A previous study (Curlette et al., 2014) was very successful in summarizing TIP groups with AAR using meta-analysis, which resulted in an effect size of .387 that was statistically significant at an alpha of .05. The forest plot in meta-analysis (Borenstein, Hedges, Higgins, & Rothstein, 2009), which shows the results of 10 previous TIP with AAR studies, is presented in Appendix G as evidence for the high likelihood of success for TIP with AAR in Project NURTURE. Furthermore, recent meta-analyses all had statistically significant overall effect sizes which exceeded the target effect size of .20.

TIP Groups Related to PLC

Using the AAR plan with TIP groups, the PLC members will create knowledge, communicate that knowledge, organize the knowledge, and act on their knowledge. In a cycle of continuous improvement, the PLC members will reflect on the previous cycle and continue to refine their work (see Figure 2). In fact, TIP groups meet the five essential characteristics of PLCs defined by Vescio et al. (2008), which are developing shared values, focusing on student learning, engaging in reflective dialogue, making teaching public, and focusing on collaboration.

Project NURTURE adopts the Transtheoretical Model of Change as our theory of change by recognizing that learning takes place over a series of developmental steps at all P-12 and

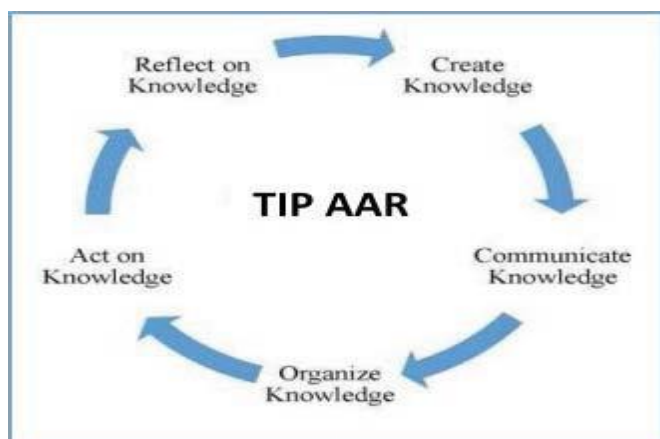


Figure 2. Change model.

university levels (Appendix G provides the full model). For the sake of brevity, we focus on three key aspects of the model: deepening knowledge, changing values, and developing skills (Prochaska & DiClemente, 1983; Prochaska, DiClemente, & Norcross, 1992).

Deepening Knowledge. Through coursework, professional development modules, PLCs focused on individualized coaching and mentorship, Project NURTURE's teacher residents/interns will develop the knowledge of teaching which will help improve the instruction of our nation's increasingly diverse learners.

Changing Values. Engaging in AAR may require changing teachers', school leaders' and teacher residents/interns' values. The model of change recognizes and explicitly addresses barriers that shifting the values, habits, and dispositions of individuals often presents when engaging in new activities.

Developing Skills. Participation in PLCs will further build the candidates' teaching and learning skills while providing a renewal opportunity for mentor teachers.

An Exceptional Approach for High-Need Students and Teacher Preparation

Our model represents an exceptional approach to supporting high-need students and improving effectiveness in four innovative ways: (1) a strong project team, (2) a unique residency model, (3) a focus on STEM in AAR with TIP, (4) an emphasis on computer science

training modules with a state certified endorsement, and (5) an integrated series of PLCs to support the adoption of a social emotional learning practices.

Our residency model builds on research validated by our previous residency model for teachers (Bohan & Many, 2011) and best practices in the literature for teacher residencies (e.g., Berry, Montgomery, & Snyder, 2008; Klein et al., 2013; Solomon, 2009). The Project NURTURE residency provides candidates opportunities to apply their theoretical knowledge in the school's context, thereby providing contextualized, experiential learning that supports the development of highly effective teachers. Through ongoing, sustained collaboration within PLCs focused on developing teaching ability embedded within the schools (Hargreaves & Fullan, 2013), complementary supporting activities, and individualized mentoring and coaching (Browne-Ferrigno & Muth, 2004), the instructional capacities will improve as they support and develop teachers' practices, thus improving students' engagement and academic achievement.

Professional learning communities (PLCs) are small learning communities dedicated to the collaborative analysis of teaching, learning, and assessment practices in the service of increased student achievement. They provide support for the successful induction and retention of new teachers and build a collaborative culture of continuous improvement focused on students' learning (Bryk, Sebring, Allensworth, & Luppescu, 2010). Therefore, our residency model includes a series of PLCs that will improve the practice of the teacher residents through focused collaborations with others in their school, external experts, and university professors and coaches. Further, while the benefits of PLCs for practice are well established (Vescio et al., 2008; Voelkel & Chrispeels, 2017), PLCs can also improve candidates' instructional skills as they deliberately work to improve their respective practices. Through the cohort structure,

teacher residents have opportunities to share their successes, concerns, and questions with peers, program graduates, and mentor leaders.

Another process that has a promising theoretical basis is the current emphasis on computer science. Seven training modules will be developed to focus on Problem Solving, Computational Thinking, Algorithmic Thinking, Coding, and Cyber Security. These will be available for P-12 partners, HEA partners, and potentially the state and nation. The State is already recognizing a need for computer science expertise in the teaching profession and the Georgia Professional Service Commission (GaPSC) has approved a computer science endorsement that will be extended through Project NURTURE. HEA partners, who produce many teachers within the state, will help research and test these modules as teacher candidates are nurtured in their various programs. We will assess the teacher self-efficacy of the program completers that have used the computer science training modules and similarly the teachers who earn a computer science endorsement from the GaPSC. Through multiple methods, we will examine student achievement, teacher retention, PLC membership, computer science training, and collaboration between HEAs and P-12 Partners.

Dissemination of Results

The dissemination is designed to be comprehensive beginning with local communities and expanding to international consortiums. University dissemination will focus on Department and College web sites, and University communications. Statewide dissemination will focus on the Georgia Educational Research Association and the Georgia Science Teachers Association. National dissemination will include presentations at the American Education Research Association (AERA) annual conferences and publication of student and faculty research in peer-

reviewed journals. International dissemination will flow through the AERA special interest groups and conferences.

Evidence of Effectiveness

Evaluation of the program has been integrated into the programmatic activities so as to be an integral part of this project. The evaluation plan is thorough, feasible, and appropriate to the goals, objectives, and outcomes of the project. We have chosen to use Stufflebeam's CIPP Model of Program Evaluation (Stufflebeam, 2000; Stufflebeam & Coryn, 2014) as the overall approach to the evaluation and a logic model (McLaughlin & Jordan, 2004). Within the context of the CIPP model, the evaluation team will use a mixed-methods approach, allowing us to meet multiple purposes and avoid trade-offs which we would otherwise be forced to decide upon, such as internal versus external validity. An overall logic model (see Appendix G) has been developed to link the activities with the outcomes and to clarify relationships. A U.S. Department of Education Evidence Form, showing how Project NURTURE is supported by studies demonstrating moderate evidence of effectiveness, is also provided in Appendix G.

Quantitative Evaluation Plan. All the quantitative evaluations employ designs which are in line with the What Works Clearinghouse (WWC) standards through the use of matched comparison schools (quasi-experimental designs) and matched classrooms to treatment (TIP) and comparison classrooms (quasi-experimental designs). Three strong features of the quantitative evaluation are the following: (1) from a list of matched schools on proportion of students on free or reduced-price lunch, previous year's academic achievement, and race/ethnic group, schools will be randomly selected to compare school climate with schools in Project NURTURE where residents have been placed, (2) the use of matched classrooms to evaluate student achievement

using the TIP with ARR approach with a quasi-experimental design, and (3) the use of meta-analysis to accumulate results across AAR studies which increases the generalization of results.

TIP groups and their evaluations. An AAR team includes university faculty, teacher residents/interns, and mentor teachers who conduct site-based research focused on increasing academic achievement at the classroom level. The key, we believe, is focusing on a more limited and manageable unit or area of instruction and then facilitating the dissemination and implementation of a successful instructional intervention. Previous research using TIP with AAR studies resulted in moderate effect sizes that were statistically significant at alpha of .05 (see Appendix G), which provides evidence of effectiveness for our approach of TIP with AAR.

School-level assessment. To measure the influence of Social Emotional Learning (SEL) on the whole school, the College and Career Ready Performance Index (CCRPI) and the School Climate rating will be used to supplement the SEL instrument. The CCRPI has four major components: achievement, progress, achievement gap, and challenge points based on input from teachers, interns, staff, and other stakeholders in the school. The school climate rating is an overall measure of student and teacher climate that is measured by a GaDOE administered survey annually. We hypothesize that focused development of SEL strategies by the residents and mentor teachers and school-level PLCs will increase the CCRPI and school climate rating in the second through fifth years when school-wide implementation occurs. The GaDOE makes the school level CCRPI and climate ratings public annually.

Qualitative Evaluation Plan. Qualitative research focuses on the description, conceptual construction, and contextual factors concerning a situation, event, or lived experience. Project NURTURE's qualitative approach (see Merriam, 2009) will include collecting data from various stakeholders to determine how they make meaning of their participation in the program and how

they incorporate what they learn to the benefit, directly or indirectly, of school students. Specifically, the residents, mentor teachers, and administrators in the treatment schools may be interviewed face-to-face, by phone, or using Internet communications. The data will be analyzed, and results will be produced for formative and summative reporting.

Transferability “is the ability of the researcher (and user of the research results) to extend findings of a particular study beyond the specific individuals and settings in which that study” is conducted (Mertens, 2015, p. 319). To facilitate transferability, findings and reports of outcomes will include robust descriptions (Geertz, 1973) and ethically responsible transparencies so that potential audiences—other institutions of higher education, other school systems—can evaluate the transferability of our outcomes to their situations and assess how our program or its components might improve outcomes for children in their location.

Performance Data

Descriptive information regarding the number of participants for each objective will be provided each year for the previous year by September 1.

Data Analysis. In addition to the meta-analysis, the data analyses will consist of analyses of variance, propensity score analysis, and possibly structural equation modeling (SEM) for each year and accumulated over years. The purpose of the meta-analysis is to provide a cumulative sample and increase generalization of results. Through analysis of variance the classrooms and schools can examine the student achievement (classroom level), CCRPI and school climate ratings (school level) outputs Propensity score analysis will help provide dependable matching strategies using the various matching options provided. Finally, SEM requires a large data set and examines the relations of variables within a given model. If there are enough data and clearly defined variables, SEM may be a possibility for examining a multiple year study. All statistical

significance testing will be done with a conceptualized alpha of .05 or lower. Throughout the evaluation process, efforts will be made to minimize threats to validity (Shadish, Cook, & Campbell, 2002).

Mediators. A mediator variable helps to account for the relationships between a predictor variable and an outcome variable. In general, we will test for mediation (and moderation) through regression analyses for variables that may affect the relationship of key components on the outcomes. An example of mediation is when a variable is influenced by the predictor variable and in turn influences the outcome variable. This is slightly different from moderation (interaction) in which an influence from the moderator variable affects the relationship between the predictor and outcome variable.

Performance Objectives

The performance objectives and their data sources, indicators, targets, timeline, and responsible party are listed in the following order: Section 1: GPRA Objectives, Section 2: HEA Objectives, and Section 3: Project NURTURE Program Objectives. The GPRA and HEA performance measures are specified in the grant and the Project NURTURE objectives align with the program. For each objective, and its associated activities, a performance measure has been specified so that the Project NURTURE grant will be accountable for the expenditure of grant funds to include partner cost share and funds from other related sources. With the timeline and responsible party in these charts below, this information contributes to the management plan regarding reporting data for all performance objectives. In all instances, IRB regulations will be followed.

Table 3. GPRA Indicators

Data Source	Indicator	Target for Indicator	Timeline	Responsible Party
Program completers & Ga PSC licensure.	GPRA 1. % of program completers	80% of program completers meeting requirements annually	June 1 for previous academic year	Hendrick
Program completers in math & science	GPRA 2. % of math/science residents who complete certification requirements.	80% of math & science program completers become certified teachers	% reported each year as of June 1 for previous academic year	Hendrick
Reports from college departments regarding status of program participants	GPRA 3. Ratio of no. of participants not graduating in previous year ÷ no. of residents for that year.	Less than 10% do not graduate on- time according to program plan	Aug. 15 for previous academic year	Feinberg

Data Source	Indicator	Target for Indicator	Timeline	Responsible Party
Georgia Professional Standards Commission	GPR4 4. % of Project NURTURE beginning teachers retained after one year	80%	Nov. 30 for preceding academic year	Hendrick, Curlette
Retention data from Georgia PSC	GPR4 5. Teacher retention for 3 consecutive years	70% of new teachers who complete residency will be retained by high-need LEA for 3 years	Oct. 1 for previous academic year	Hendrick

GPR4 Indicator Performance Measure 1: Certification/Licensure. The percentage of program graduates who have attained initial State certification/licensure by passing all necessary licensure/certification assessments within one year of program completion.

The plan for residency program meets these requirements as discussed previously. Careful monitoring of students in the resident program by faculty advisors will help meet this objective. The IDs of residency program completers within 1 year of program completion are matched with list of teachers having licensure by Georgia Professional Standards Commission to

obtain total number of program completers having licensure divided by the total number of program completers that year.

GPRA Indicator Performance Measure 2: STEM Graduation. The percentage of math/science program graduates that attain initial certification/licensure by passing all necessary licensure/certification assessments within one year of program completion.

GPRA Indicator Performance Measure 3: One-Year Persistence. The percentage of program participants who were enrolled in the postsecondary program in the previous grant reporting period, did not graduate, and persisted in the postsecondary program in the current grant reporting period.

GPRA Indicator Performance Measure 4: One-Year Employment Retention. The percentage of program completers who were employed for the first time as teachers of record in the preceding year by the partner high-need LEA or ECE program and were retained for the current school year.

GPRA Indicator Performance Measure 5: Three-Year Employment Retention. The percentage of program completers who were employed by the partner high-need LEA or ECE program for three consecutive years after initial employment.

GPRA indicator Efficiency Measure 6: The Federal cost per program completer. (These data will not be available until the final year of the project.) As defined by the DOE, the cost per program completer is a gross calculation of the total federal funds allocated for the program divided by the total number of program completers during the grant period.

Table 4. HEA Section 204(a) Indicators

Data Source	Indicator	Targets for Indicator	Timeline	Facilitator
Faculty & administrator ratings of prospective & new teachers	HEA 1. Teacher Assessment on Performance Standards (TAPS).	Resident's assessment mean will exceed 3.0 on a 4.0 point scale.	Oct. 15 for previous academic year	Feinberg
Georgia PSC	HEA 2. % of teachers retained after three years in partnership	70%	Dec. 15 after 3 academic years	Hendrick
GACE licensure scores from Georgia PSC	HEA 3. % of program completers whose GACE scores are passing compared to the percentage of non-Project NURTURE graduates passing the GACE in the baseline year.	1 st year - Increase in % of completers passing GACE of 2% over baseline year. 2 nd year & thereafter, an additional 3% over baseline year or achieving a 95% pass rate.	Sept 15 for report	Hendrick

Data Source	Indicator	Targets for Indicator	Timeline	Facilitator
Hiring records of the partner LEAs	HEA 4. % of teachers who have completed the program and obtained a teaching certificate hired in high-need partnership LEAs	80% of program completers hired by partnership high-need LEAs	Oct 15 for preceding academic year	Hendrick
Hiring records of the partner LEAs	HEA 5. % of teachers hired in partnership LEAs from under-represented groups each year	50% of Project NURTURE teachers hired are from underrepresented groups	Oct 15 for preceding academic year	Hendrick
Hiring records of the partner LEAs	HEA 6. % of program completers teaching in high-need academic subject areas	50% of Project NURTURE teachers hired by partner LEAs will teach in high need academic subject areas	Oct 15 for preceding academic year	Hendrick
Hiring records of the partner LEAs	HEA 7. % of teachers hired by partner LEAs in high need-areas	50% of program completers hired by partner LEAs will teach in high need subject areas	Oct 15 for preceding academic year	Hendrick

Data Source	Indicator	Targets for Indicator	Timeline	Facilitator
Hiring records of the partner LEAs	HEA 8. % of program completers employed in partner LEAs per year	Disaggregated by Elementary (10%) and Secondary (90%) levels	Oct. 15 for preceding academic year	Hendrick
Survey of teachers in Project NURTURE schools	HEA 10.1. % of Partner LEA teachers at or above level 3 on CBAM	75% of teachers surveyed are at or above level 3	Aug. 1 for preceding academic year	Hendrick
Interviews & data from computer usage survey	HEA 10.1. How program graduates are using technology for instruction in their classrooms.	Successful integration of technology in classroom instruction	Aug. 1 for preceding academic year	Boozer
Survey of teachers in Project NURTURE schools	HEA 10.2. % of Partner LEA teachers at or above level 4 on CBAM	60% of teachers surveyed are at or above level 4	Aug. 1 for preceding academic year	Hendrick

Data Source	Indicator	Targets for Indicator	Timeline	Facilitator
Interviews and data from computer usage survey	HEA 10.2. How program graduates are using technology for assessment in their classrooms	Successful integration of technology in classroom assessment	Aug 1 for preceding academic year	Boozer

HEA Indicator 1. - Achievement for all prospective and new teachers, as measured by the eligible partnership. As part of the Race to the Top Initiative (RT3), Georgia, in collaboration with RT3 Districts, educational partners, and the Evaluation Task Force Committee, developed a new effectiveness system for teacher evaluation and professional growth. The Teacher Keys Effectiveness System (TKES) consists of multiple components, including the Teacher Assessment on Performance Standards, Surveys of Instructional Practice, and measures of Student Growth and Academic Achievement. The overarching goal of TKES is to support continuous growth and development of each teacher.

HEA Indicator 2. Teacher retention in the first three years of a teacher's career.

HEA Indicator 3. Improvement in the pass rates and scaled scores for initial State certification or licensure of teachers.

HEA Indicator 4. The percentage of teachers who meet the applicable State certification and licensure requirements, including any requirements for certification obtained through alternative routes to certification, or, with regard to special education teachers, the qualifications described in section 612(a)(14)(C) of the IDEA ([20 U.S.C. 1412\(a\)\(14\)\(C\)](#)), hired by the high-need LEA participating in the eligible partnership.

HEA Indicator 5. The percentage of teachers who meet the applicable State certification and licensure requirements, including any requirements for certification obtained through alternative routes to certification, or, with regard to special education teachers, the qualifications described in section 612(a)(14)(C) of the IDEA ([20 U.S.C. 1412\(a\)\(14\)\(C\)](#)), ***hired by the high-need LEA who are members of underrepresented groups***

HEA Indicator 6. The percentage of teachers who meet the applicable State certification and licensure requirements, including any requirements for certification obtained through alternative routes to certification, or, with regard to special education teachers, the qualifications described in section 612(a)(14)(C) of the IDEA ([20 U.S.C. 1412\(a\)\(14\)\(C\)](#)), ***hired by the high-need LEA who teach high-need academic subject areas (such as reading, mathematics, science, and foreign language, including less commonly taught languages and critical foreign languages)***.

HEA Indicator 7. The percentage of teachers who meet the applicable State certification and licensure requirements, including any requirements for certification obtained through alternative routes to certification, or, with regard to special education teachers, the qualifications described in section 612(a)(14)(C) of the IDEA ([20 U.S.C. 1412\(a\)\(14\)\(C\)](#)), ***hired by the high-need LEA who teach in high-need areas (including special education, language instruction educational programs for limited English proficient students, and early childhood education)***.

HEA Indicator 8. The percentage of teachers who meet the applicable State certification and licensure requirements, including any requirements for certification obtained through alternative routes to certification, or, with regard to special education teachers, the qualifications described in section 612(a)(14)(C) of the IDEA ([20 U.S.C. 1412\(a\)\(14\)\(C\)](#)), ***hired***

by the high-need LEA who teach in high-need schools, disaggregated by the elementary school and secondary school levels.

HEA Indicator 9. As applicable, the percentage of early childhood education program classes in the geographic area served by the eligible partnership taught by early childhood educators who are highly competent This HEA Indicator is **not applicable** since the program does not involve early childhood education.

HEA Indicator 10.1. *As applicable, the percentage of teachers trained—(i) To integrate technology effectively into curricula and instruction, including technology consistent with the principles of universal design for learning.* Although this topic is covered in the GACE licensure examination, a separate Internet survey will be conducted of teachers in the Project NURTURE partner LEAs. First, the *Concerns Based Adoption Model* survey (CBAM; American Institutes for Research, 2019a) Instrument will be employed to obtain a guideline for the degree to which technology is being used by teachers. In addition, specific questions will be asked about technology consistent with the principles of universal design for learning using the *Teacher Proficiency Self-Assessment* by Ropp (1999) and other relevant and valid instruments. Then, qualitative research will be conducted with people involved in Teacher-Intern-Professor (TIP) groups to gain an understanding of participants experiences during the integrating of technology into instruction for Project NURTURE residents.

HEA Indicator 10.2. *As applicable, the percentage of teachers trained—(ii) To use technology effectively to collect, manage, and analyze data to improve teaching and learning for the purpose of improving student academic achievement.*

First, the Teacher-Intern-Professor (TIP) Model emphasizes the use of teachers employing data by reviewing the Georgia Milestone scores for students in their classes to

identify a "domain" (subtest strand; e.g., computations in mathematics) for emphasis in their instruction. Qualitative data will be obtained from interviews with teachers to better understand their use of data to improve student achievement. Second, open and closed type questions will be asked on an Internet survey distributed to all teachers in the Project NURTURE partner LEAs regarding using data to improve teaching and learning.

Table 5. Project NURTURE Objectives with Indicators

Project NURTURE *Objectives*. The following objectives are unique to Project NURTURE. The Project NURTURE performance objectives with indicators and targets for performance provide data to indicate whether objectives are being met, providing project accountability. Furthermore, these results support formative evaluation and provide observable data to indicate the degree of overall success of Project NURTURE at a particular time during the project's implementation.

Some of the performance indicators are concerned with describing if the activity actually occurred and other objectives are concerned with the effectiveness or quality of the activity. Taken together this information contributes to assessing the worth of Project NURTURE.

Data Source	Indicator	Target for Indicator	Timeline	Facilitator
GSU professor in charge of urban Residency Program	PN 1a. No. of participants each year in urban Residency Program	9 participants in year 1 and 13 participants in years 2-5. Total = 61	Sept. 1 & Feb. 1 each year for reports of enrollment	Feinberg for obtaining enrollment numbers

Data Source	Indicator	Target for Indicator	Timeline	Facilitator
University professors in charge of rural Residency Program	PN 1b. No. of participants each year in rural Residency Program	17 participants in year 1 and 24 participants in years 2-5. Total = 113	Sept. 1 & Feb. 1 each year for reports of enrollment	Feinberg for obtaining enrollment numbers
Pre-and Post-Test scores of AAR Project NURTURE and comparison classes	PN 1c. Hedge's g mean difference effect size for comparing Project NURTURE scores with comparison group scores.	Standardized mean difference effect size of .2 in favor of the Project NURTURE classrooms	Report Feb 1 in years 2 to 5	Hendrick
GSU Director of AFT programs & previous status reports	PN 2a. Documentation (interviews, artifacts) of development and implementation of AFT programs at each partner university.	Description of successes and challenges in implementing AFT programs.	Three reports annually	Granville

Data Source	Indicator	Target for Indicator	Timeline	Facilitator
Director of AFT programs and status reports	PN 2b. No. of participants each year in AFT summer enrichment programs	Maximum of 150 in year 3 through 5 as stated in proposal per year	Sept. 1 each year	Forstner
Interviews with potential participants for the resident program conducted in rural districts	PN 3a. How well information was communicated at the “onboarding” sessions.	Positive perceptions of effectiveness of residency program components	Report available by August 1 st each year	Ogletree
Roster & agenda of summit	PN 3b. Attendance and content of summit	80% attendance rate for current residents and 50% attendance rate for past residents	Aug report annually	Ogletree
Interviews with summit participants	PN 3b. Perceptions of usefulness of summit activities and feedback regarding academic program	Participants will gain useful information from the summit and describe their program positively	Aug report annually	Ogletree

Data Source	Indicator	Target for Indicator	Timeline	Facilitator
Academic performance of residents (GSU)	PN 4a. Assessment of requirements for teacher education program	Provide coaching for 90% of students who lack pre-requisites	Sept 15 report annually	Hendrick
Academic performance of residents (FVSU & MGSU)	PN 4b. Assessment of requirements for teacher education program	Provide coaching for 90% of students who lack pre-requisites	Sept 15 yr. report	Hendrick
Interviews with members of graduated program cohorts; retention data	PN 5a. How induction support has contributed to graduates' staying in the profession.	Description of how teachers have made use of induction program that led to their retention in the profession.	Sept 15 report annually	Ogletree, Hendrick
Survey of former residents 2 years after completion of program	PN 5b. Perceived efficacy on 5-point Likert scale	Mean of 3.5 perceived efficacy	Nov. 15 report annually beginning year 4	Hendrick

Data Source	Indicator	Target for Indicator	Timeline	Facilitator
Interviews of residents, mentors, & teachers engaged in PLC	PN 6a. How participants have experienced involvement with PLCs	Description of the benefits of PLC involvement	Nov 15 report annually	Ogletree
PD rosters, training agendas for PD and coaching	PN 6b. How well participants are conducting PLCs.	Description of adherence to standard practices for effective PLCs	Nov 15 report annually	Ogletree
School Climate Scores	PN 6c. Scale means	Project NURTURE schools have higher mean compared to comparison schools with effect size > .20	Nov. 15 report annually	Hendrick
District teachers	PN 7a. Mentor teacher requirements	5 new mentor teacher per years	Nov 15 report annually	Hendrick
Mentor teacher interviews	PN 7b. How potential mentors evaluate the usefulness of the modules	Participants provide constructive feedback regarding the modules.	Nov. 15 report annually	Ogletree

Data Source	Indicator	Target for Indicator	Timeline	Facilitator
Implement web-based computer science training	PN 8a. Develop and disseminate 7 training modules to partners	7 Modules developed by Year 3	Nov 15 report	Ogletree
Finalize GaPSC Computer Science Endorsement	PN 8b. Participants meet CS endorsement requirements	60% of Participants who complete CS training earn GaPSC CS endorsement	Nov 15 report	Hendrick
Survey of participants who complete CS training modules	PN 8c. Efficacy of participants who complete CS training modules	70% of participants who complete CS training will indicate high levels of efficacy (mean of 3.5 on 5 point scale)	Nov 15 Report	Hendrick
Survey of participants who complete GaPSC CS endorsement	PN 8d. Efficacy of participants who complete GaPSC CS endorsement	80% of participants who complete GaPSC CS endorsement will indicate high levels of efficacy (mean of 3.5 on 5 point scale)	Nov 15 Report	Hendrick

Data Source	Indicator	Target for Indicator	Timeline	Facilitator
Advisory Board minutes, agenda, observation notes	PN 9. How Advisory Board responds to changing state initiatives	Advisory Board makes recommendations for program alignment	Nov 15 report annually	Ogletree

Objective 1a: Recruit and enroll 9 residents (year 1), and 13 (years 2-5) in the urban Project NURTURE (GSU) teacher residency program.

Objective 1b: Recruit and enroll 17 residents (year 1) and 24 (years 2-5) in the rural Project NURTURE (FVSU/MGSU) teacher residency program.

Objective 1c: Increased student achievement in Project NURTURE classrooms on multiple-choice tests using AAR. Project NURTURE residents work with the mentor teacher to implement AAR within the Project NURTURE classrooms for a unit of instruction. The instructional unit will have a pre- and post-test that will also be administered to a matched comparison class. The mean gain of the Project NURTURE class and Comparison Class will be analyzed using Hedge's g standardized mean difference effect size. By summarizing the AAR studies from these classrooms using meta-analysis (Borenstein, Hedges, Higgins, & Rothstein, 2009), this research design will provide evidence for the instruction effectiveness of Project NURTURE.

Objective 2a: Develop the infrastructure for and implement 3 Academy for Future Teachers (AFT) Summer enrichment programs.

Objective 2b: Recruit and enroll 20 participants in each of the AFT summer enrichment programs annually.

Objective 3a: Provide two “onboarding” sessions to recruit potential paraprofessional residency candidates annually. Focus questions to guide the qualitative report on the Project NURTURE onboarding sessions will include items regarding literacy aspects of the program, special education aspects of the program; endorsements (e.g., ESOL, mathematics), integration of “technology, and ability to analyze data for improving teaching and learning .

Objective 3b: Provide an annual Teacher Readiness and Residency Summit to provide professional development to emerging, enrolled, and completing residents along with the stakeholders who support them.

Objective 4a: Annually, provide academic coaching for 9 pre-baccalaureate students who are missing at least 2 prerequisite requirements for admission to the teacher education program in the urban Project NURTURE site.

Objective 4b: Annually, provide academic coaching for 15 pre-baccalaureate students who are missing at least 2 prerequisite requirements for admission to the teacher education program in the rural Project NURTURE site.

Objective 5a: Produce a web-based induction support series that will be implemented with each graduating teacher residency cohort.

Objective 5b: Measure the perceived efficacy of the induction support series with program completers two years following program completion.

Objective 6a: Provide 3-day training on cross-career professional learning communities to mentors and leaders in the partner P-12 schools two times annually for metro and rural schools.

Objective 6b: Provide ongoing follow-up coaching to cross-career PLCs four times per year for urban and rural teams.

Objective 6c: Increased CCRPI scores and School Climate ratings for Project NURTURE schools compared to matched comparison schools.

Objective 7a: Identify pool of teachers in partner district(s) who may be eligible to serve as mentor teachers.

Objective 7b: Implement mentor development modules with mentor teachers annually via 4 hybrid professional development sessions.

Objective 8a: Produce and implement a web-based computer science training module series that will be available to all residents, preservice and in-service teachers, and university faculty participating in the state of Georgia.

Objective 8b: Produce and implement a computer science endorsement (CSEnd) program that will be available to Project NURTURE residents, mentor teachers, and teachers in the state of Georgia.

Objective 8c: Measure the efficacy of participants who complete CS training modules two years after program completion.

Objective 8d: Measure the efficacy of participants who complete the CSEnd two years after earning the endorsement.

Objective 9: Meet with Project NURTURE advisory board twice per year to align grant elements with changing state initiatives.