Catalyzing Innovations in Teacher Leader Development in Rural and Urban Settings

A Proposal by New Teacher Center, partnering with the Southeast/South-Central Educational Cooperative, the Niswonger Consortium of School Systems, Hillsborough County Public Schools, and Houston Independent School District.

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Overview: New Teacher Center (NTC) and its rural partners, the Southeast/South-Central Education Cooperative (SESC) in Appalachia Kentucky and the Niswonger Consortium of School Systems in northeast Tennessee (TN Consortium), along with its urban partners, Hillsborough County Public Schools (HCPS) and the Houston Independent School District (HISD), evaluation partner, SRI International, and resource efficiency partner, Education Resource Strategies (ERS), respectfully submit this proposal for the Education Innovation and Research (EIR) Expansion program. Over the 5-year grant period, NTC proposes to implement its high-quality, scalable instructional coaching (IC) program, which prepares instructional coaches to accelerate teachers' instructional practices through job-embedded coaching and supports that focus on improving student achievement. This project will support 8,600 K-12 teachers and 133,000 K-12 students, 66% of whom qualify for the federal Free or Reduced-Price Lunch Program (FRLP), in high needs settings, where over 55% of the total schools served are designated rural. The impact of the project will be assessed through a rigorous third-party evaluation using a randomized controlled trial (RCT) experimental design. This proposal responds to **Absolute Priority 1** (Strong Evidence) and **Absolute Priority 2** (Field-Initiated Innovations), taking an exceptional approach to address the problem of the national student achievement gap by disrupting how schools structure, resource, and implement an IC program, in order to ensure a sustained focus on improving student learning.

In this project, NTC proposes to scale its IC program district- and consortia-wide in four partner sites across urban and rural settings. The five main goals of this project are to: 1) Build a sustainable and cost-effective teacher development strategy that partner sites own and lead; 2) Build the capacity of school leaders to support and sustain instructionally-focused teacher support; 3) Select, train, and support coaches to provide ongoing instructionally-focused

coaching; 4) Provide exceptional instructional support for teachers; and 5) Ensure timely data is shared across stakeholder groups to understand progress and course correct. By reaching these goals, NTC and its partner sites aim to achieve the following three outcomes: (1) Increased proficiency in Framework for Teaching components under classroom environment and instruction; (2) Improved student achievement in ELA, math and science; and (3) Increased site capacity to replicate and sustain IC.

To reach the district- and consortia -wide level of scale proposed in this project, NTC will employ a gradual-release strategy over four phases to ensure there is a focus on building capacity and change management for partner sites with early adopters, then broadening. Further details about this strategy to scale can be found in Section C1. This approach will enable NTC to further test and prove the effectiveness of its IC program in diverse settings, providing a cost-effective strategy for partner sites across the nation to address the student achievement gap.

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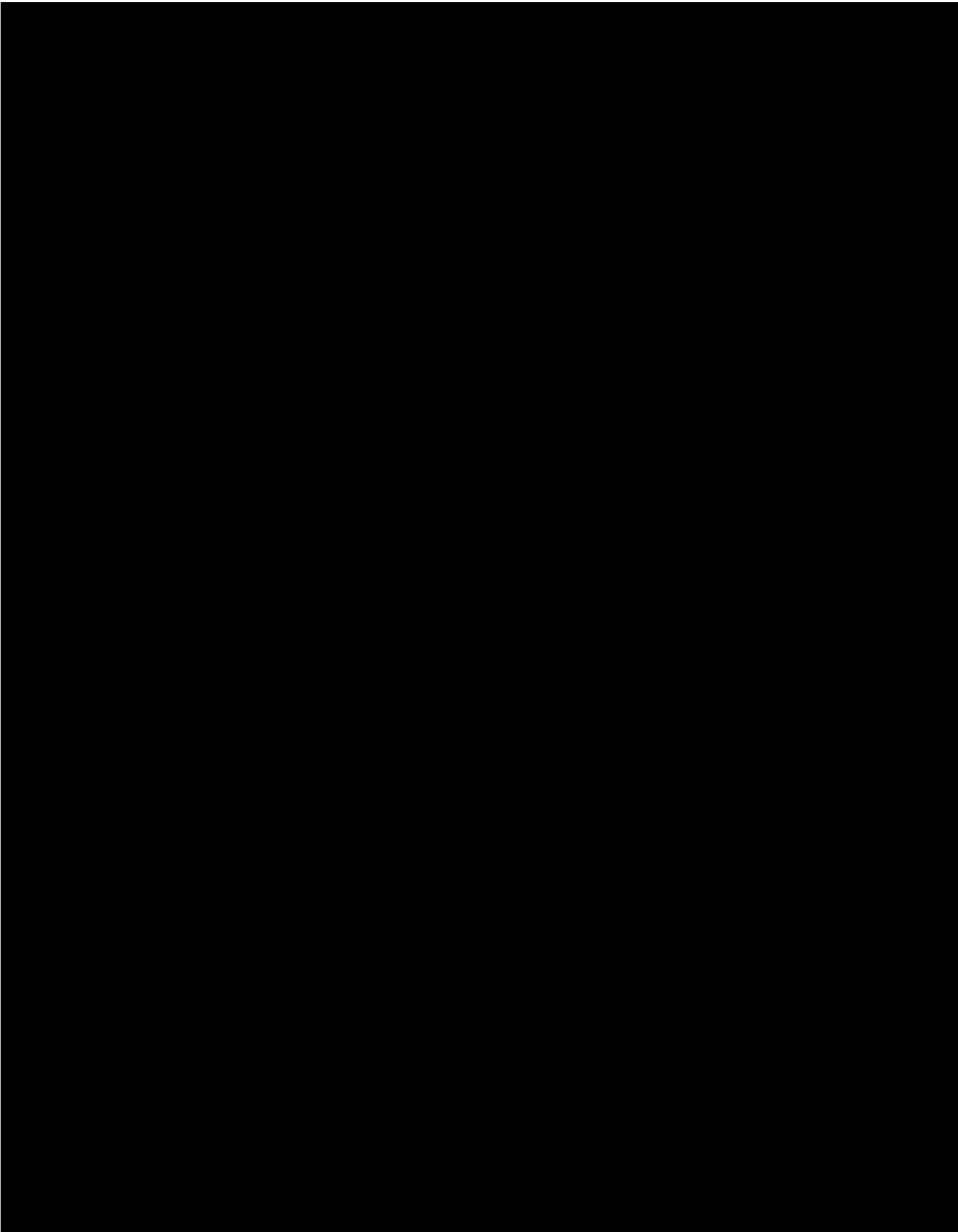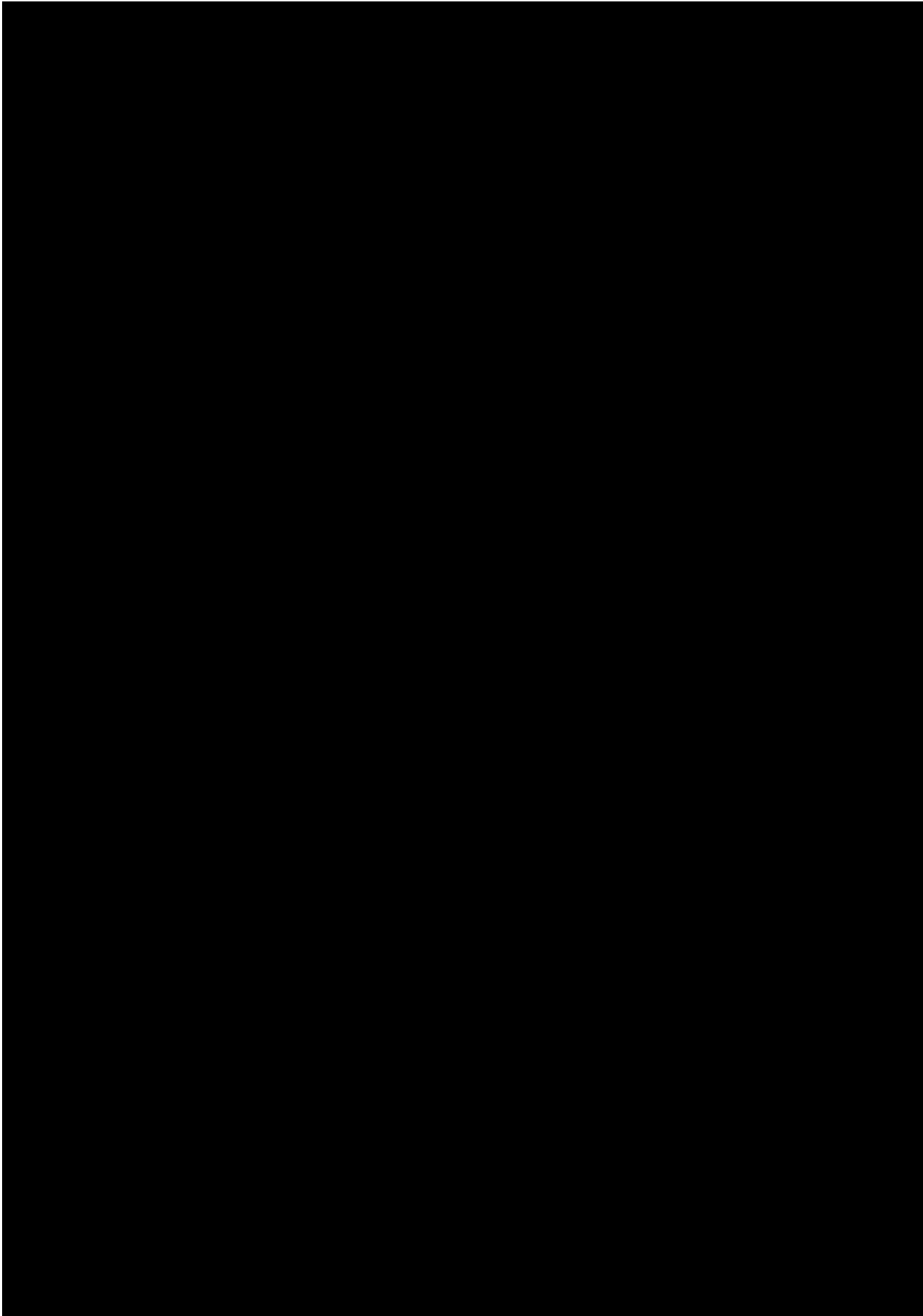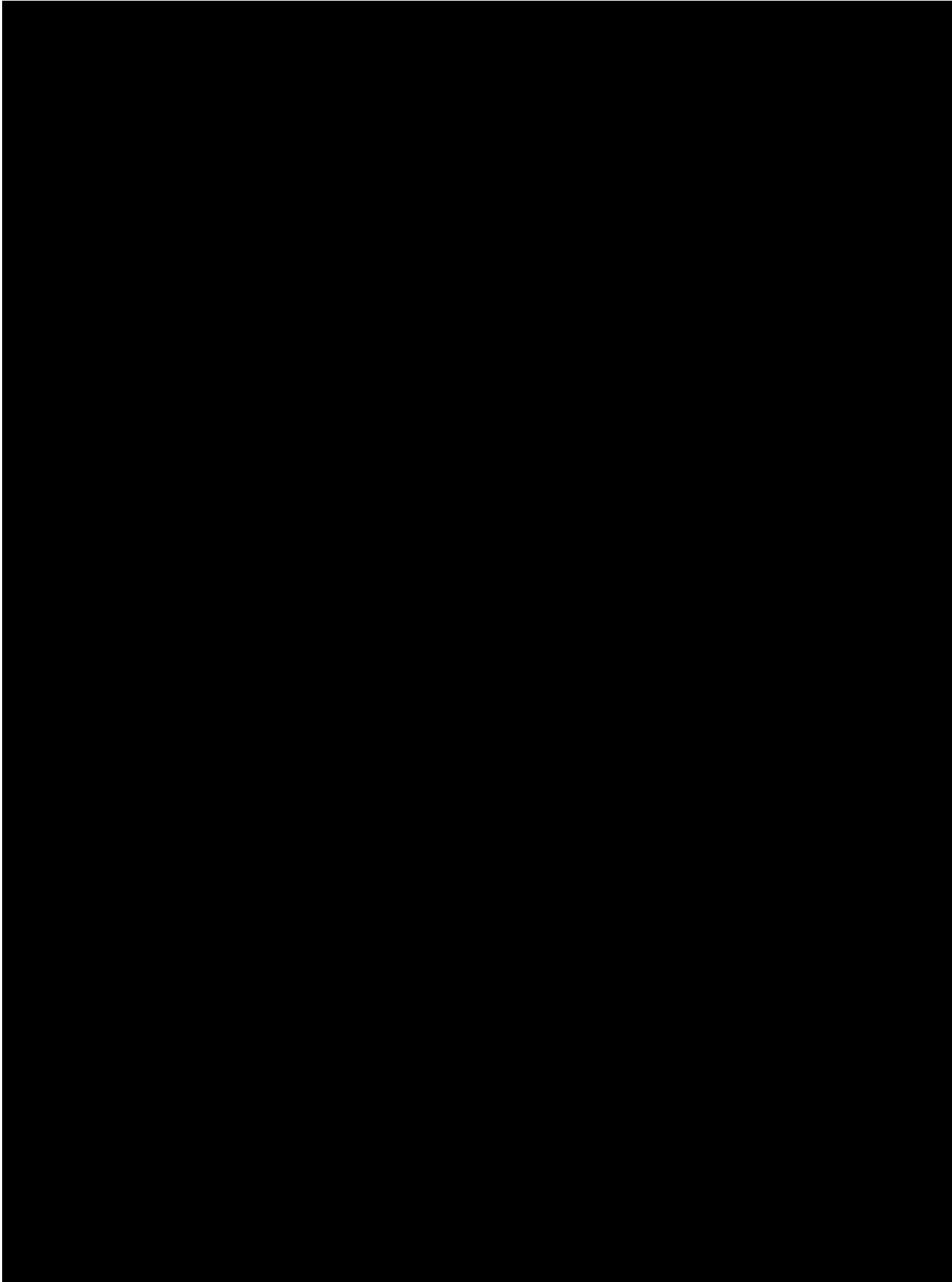
Section B: Quality of Project Design

B1 (Specific and Measurable Goals, Objectives and Proximal Outcomes): This project

includes five goals that are aligned to key components within NTC's conceptual framework.

More information about each key component can be found in section B2. The goals of this

project, along with the key component they are mapped to, are as follows:

1. Build a sustainable and cost-effective teacher development strategy that partner sites own

    and lead (Key component: Establishing Conditions of Success),

2. Build the capacity of school leaders to support and sustain instructionally-focused teacher

    support (Key component: School Leader Capacity Building),

3. Select, train, and support coaches to provide ongoing instructionally-focused coaching

    (Key component: Coach Development),

4. Provide exceptional instructional support for teachers (Key component: Teacher

    Development), and

5. Ensure timely data is shared across stakeholder groups to understand progress and course

    correct (Key Component: Formative Feedback and Evaluation).

To ensure these goals are achieved, NTC and its partner sites will assess the implementation of

the IC program with specific objectives and performance measures [Table 1]. Information about

how NTC will manage this project can be found in Section D1. Furthermore, the logic model for

the proposed research of this project can be found in Section E.

Table 1: Goals, Objectives, and Proximal Outcomes

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Goal 1: Build a sustainable and cost-effective teacher development strategy that partner sites own and lead **Key Component 1: Establishing Conditions for Success**	
Objectives	• Garner central office support through change management • Conduct budget analysis and resource review to sustain coaching positions • Identify and train a program lead/advocate • Partner site staff attend NTC National Presenter Institutes and the National Program Leader Network (NPLN) to build capacity
Performance Measures	• 100% of stakeholder meetings occur with attendance by key members of the site team • Program lead identified and dedicated to project by June 2020 • Budget analysis shared with each partner site by June 2021 • District teams attend Presenter Institute • District teams attends bi-annual NPLN
Proximal Outcomes	• Partner sites develop capacity to sustain and replicate high-quality instructional coaching: • Sites identify resources to sustain coaching • Sites implement district-level policies and practices that support high-quality coaching (e.g., new hiring practices) • Sites train and support additional coaches after the grant period • Sites work with schools to create conditions that support high-quality coaching
Goal 2: Build the capacity of school leaders to support and sustain instructionally focused teacher support **Key Component 2: School Leader Capacity Building**	
Objectives	• Conduct school leader learning sessions to build knowledge of how to support instructional coaching • Program lead meets annually with school leadership to build alignment • ICs share monthly progress and review formative data with school leadership

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Performance Measures	• 80% of school leaders attend biannual learning sessions • 80% of school leaders meet annually with program leads • 80% of school leaders receive monthly reports *Note: 80% targets are based on validation and statistical association from other 3rd party evaluations in progress at NTC.*
Proximal Outcomes	• School leader buy-in and support for coaching • School leaders protect time for coaching by limiting IC's other responsibilities • School leaders foster a school culture where all teachers are open to coaching • ICs participate as key members of school leadership teams; alignment of coaching and school/district instructional priorities
Goal 3: Select, train, and support coaches to provide ongoing instructionally-focused coaching **Key Component 3: Coach Development**	
Objectives	• Help identify and select strong coaches • Ensure coaches have protected and dedicated time to provide instructionally focused coaching • Collaborate with school leaders to identify targeted, purposeful coach caseloads • Provide comprehensive ongoing professional learning for coaches • Provide real time formative feedback for coaches through in-field coaching
Performance Measures	• 80% of ICs meet hiring criteria defined jointly between NTC and partner sites • 80% of ICs report spending 65% of time coaching • 100% of ICs have 1:1 caseloads that do not exceed 15 teachers and ICs are assigned to aligned PLCs • 80% of ICs complete 80% of foundational institute days, attend 80% of forums, and set goals • 80% of ICs receive formative feedback from lead coaches *Note: 80% targets are based on validation and statistical association from other 3rd party evaluations in progress at NTC.*
Proximal Outcomes	• Coaches develop facility with NTC IC strategies, tools, and approaches • Coach demonstrate buy-in for NTC IC model • Coaches adopt proactive and instructional approaches to teacher development • Coaches are retained in school-based coaching positions

| Goal 4: Provide exceptional instructional support for teachers Key Component 4: Teacher Development	
Objectives	• Provide ongoing embedded coaching • Ensure coaching is instructionally-focused • Focus on high-leverage strategies -- lesson planning, observation and feedback, and analyzing student work
Performance Measures	• 80% of teachers receive 180 minutes of support per month • 80% of teachers report receiving instructionally focused support • 80% of teachers report that coaching is valuable • 80% of teacher-coach interactions focus on high-leverage strategies
Proximal Outcomes	• Teachers receive more intensive and more instructionally focused coaching • Teachers increase skills related to analyzing student work, planning, and effective and aligned instruction
Goal 5: Ensure timely data is shared across stakeholder groups to understand progress and course correct Key Component: Formative Feedback and Evaluation	
Objectives	• Provide real time data through the formative assessment system so teachers and coaches understand their work • Share data monthly with school and district leaders to share progress and opportunities • Convene stakeholders annually for step back meetings • Share annual findings with sites
Performance Measures	• 100% of coaches and teachers access and review data • 100% of school leaders receive monthly reports of coaching implementation • 100% of quarterly stakeholders meetings occur • Annually, evaluators share summary findings to plan for next year
Proximal Outcomes	• Stakeholder buy-in and support for high-quality coaching increases • NTC, partner sites and schools m • ake mid-course corrections as needed • Partner sites and schools ensure high-fidelity implementation of NTC IC model • NTC and partners identify program components and conditions for successful replication and testing in other contexts

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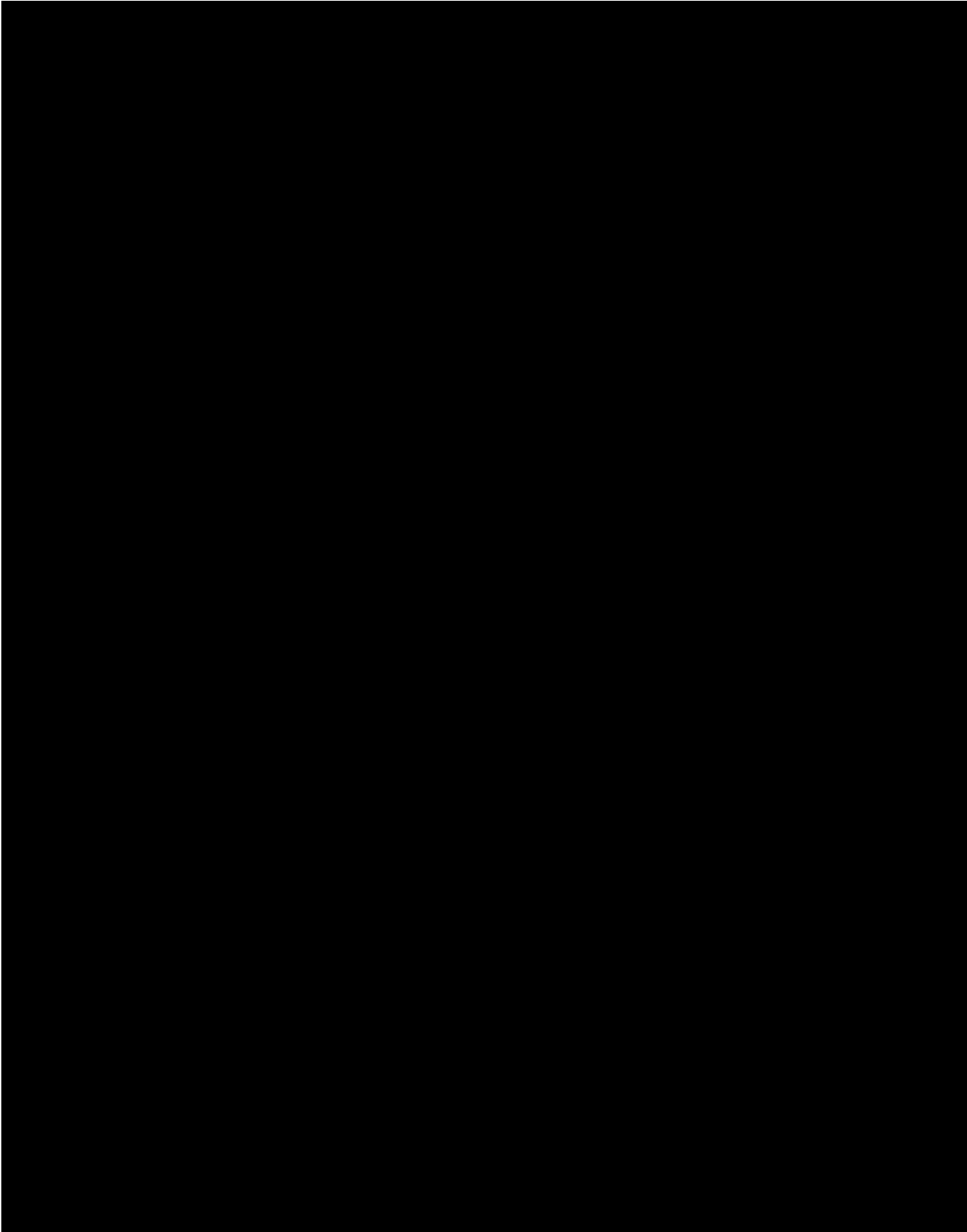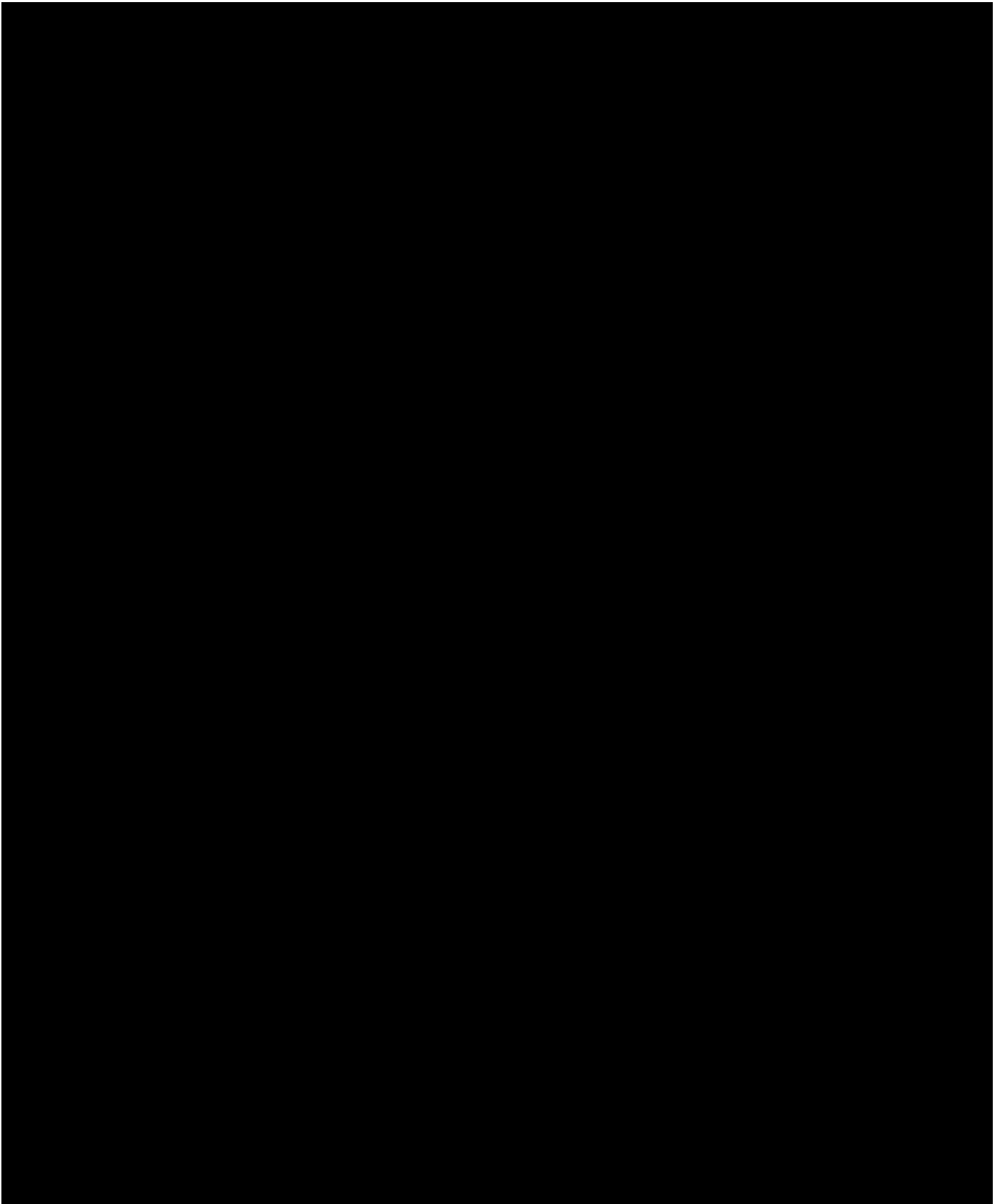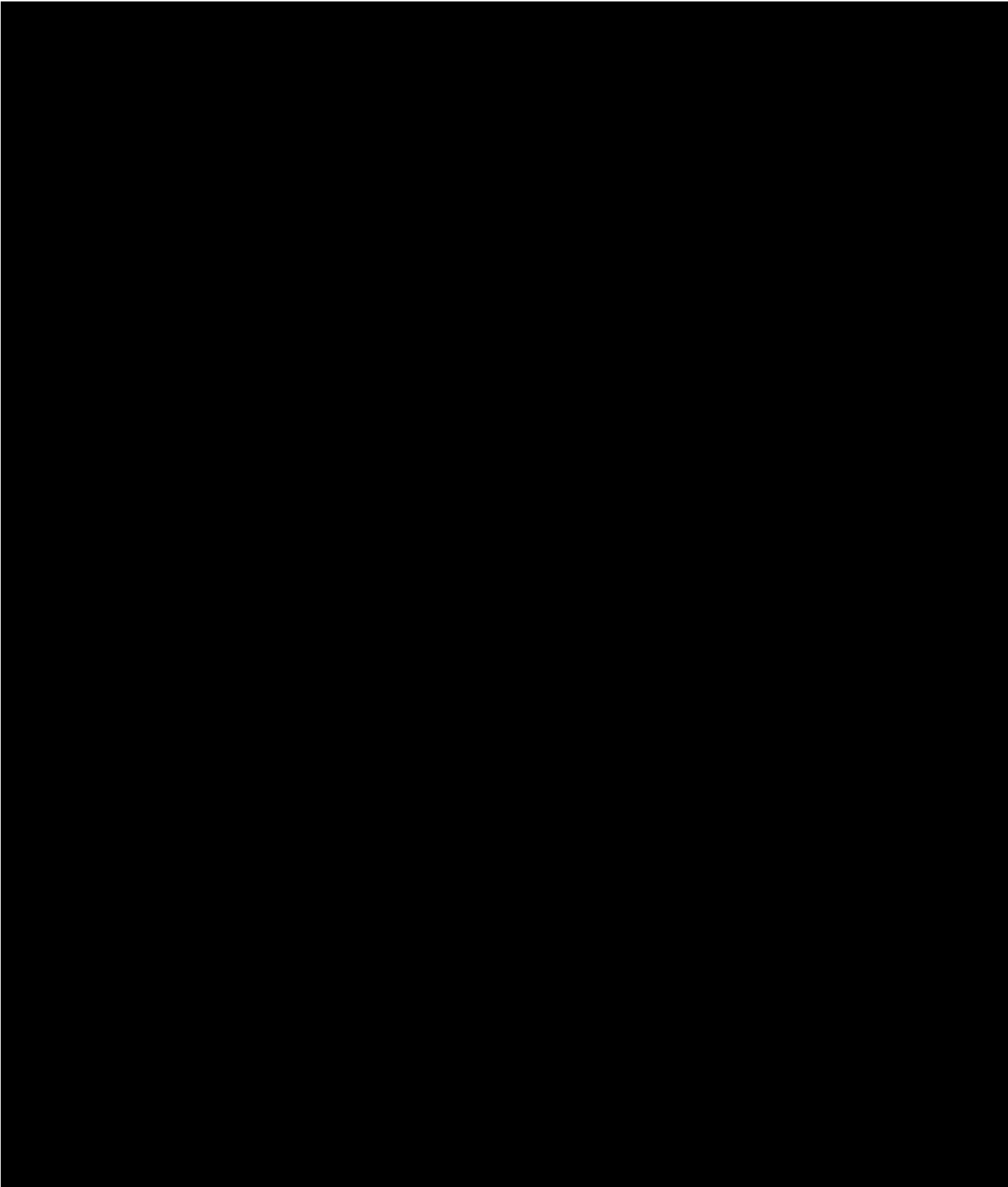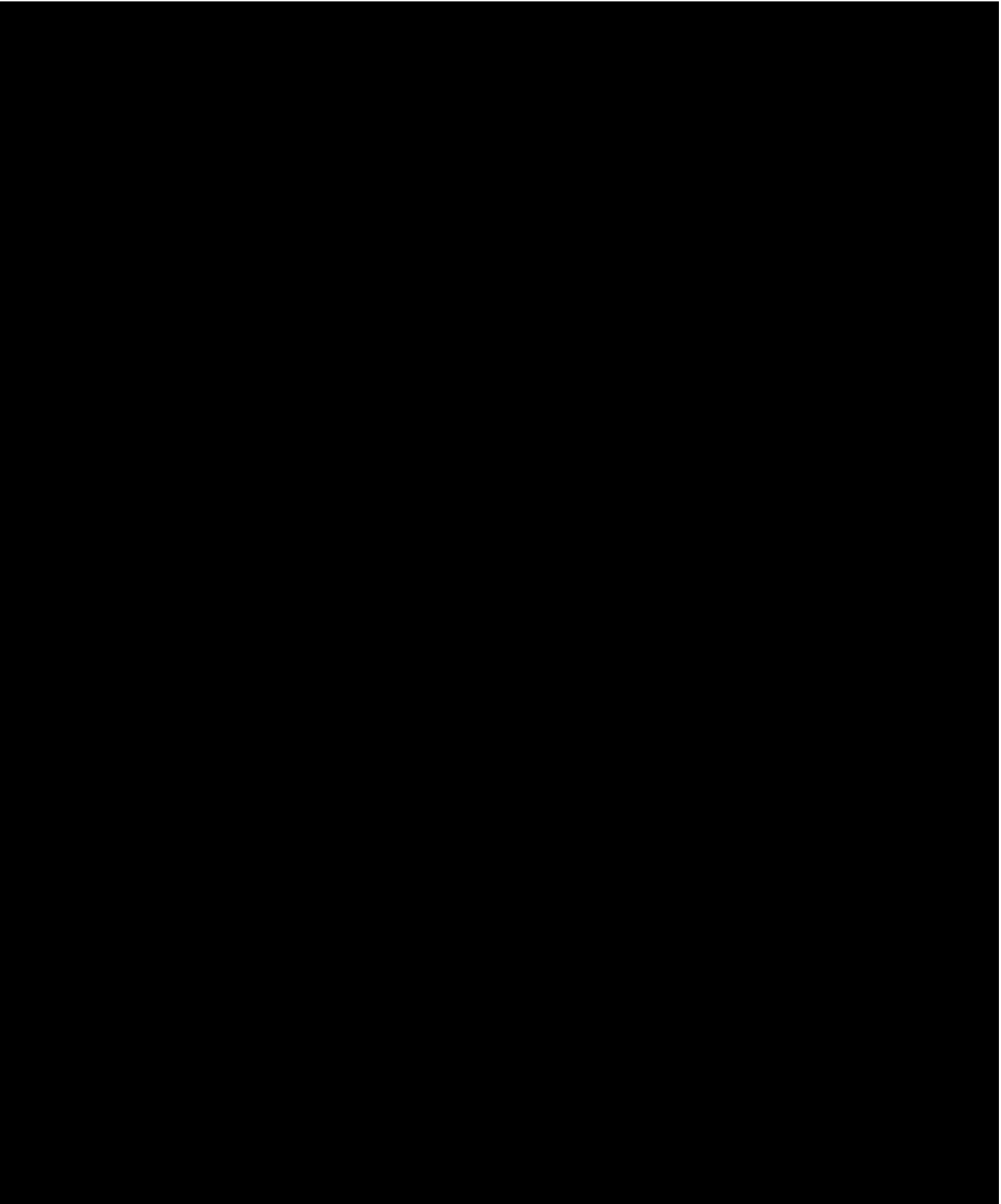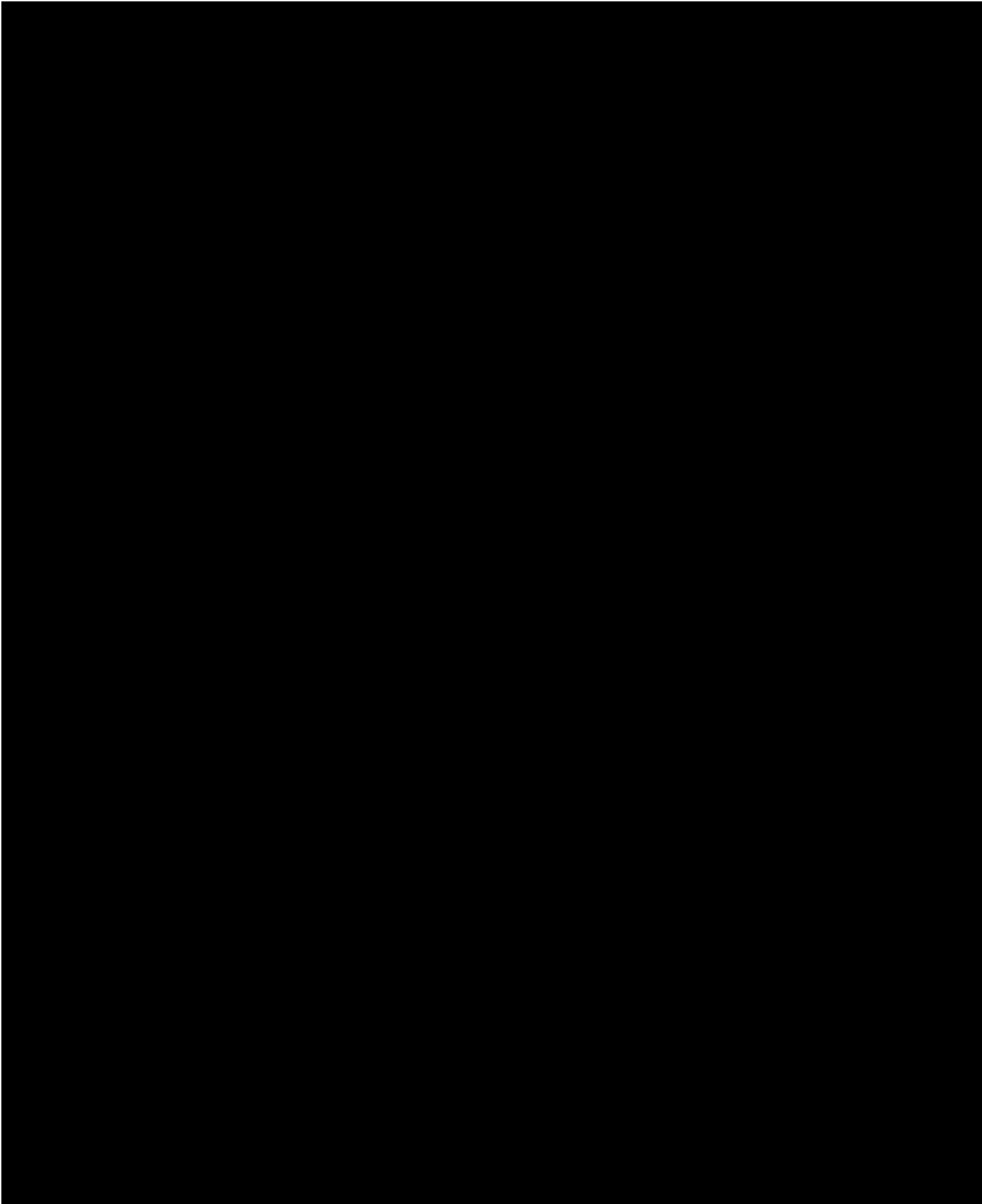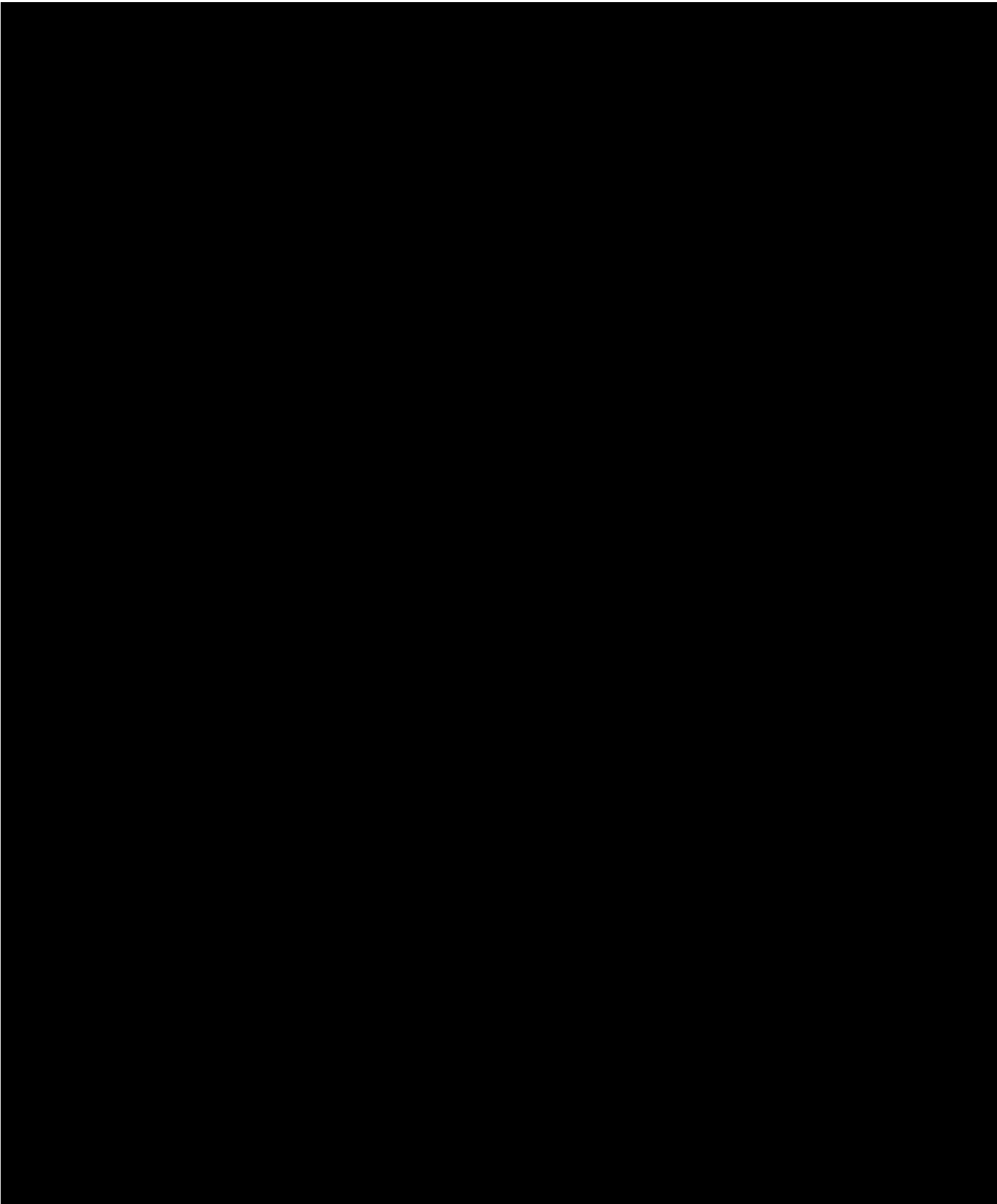
Section C: Strategy to Scale

C1 (Strategies to Address Barriers to Scale): To reach the district- and consortia -wide level of scale proposed in this project, NTC will employ a gradual-release strategy over four phases to ensure there is a focus on building capacity and change management for partner sites. Each phase of this approach is as follows:

- Phase 1: Setting the stage by partnering with sites to foster central office and school leader buy-in, identify site program leads, launch the study and randomize schools, and select and train instructional coaches [Year 1]

- Phase 2: Creating demonstration sites through early adopters and building capacity through early adopters within each partner site [Years 2, 3, & 4]

- Phase 3: Scaling implementation to control sites and beyond with each partner site that will more than double the project's reach [Years 4 & 5]

- Phase 4: Codifying and sharing learnings from each partner site [Years 4 & 5]

This gradual-release strategy will be essential in helping partner sites address the barriers that have prevented them from implementing high-quality, district- and consortia-wide IC. Broadly the 4 sites' barriers to successfully implementing strong IC can be summarized as:

1. Fragmented or Underutilized Coaching

2. Inefficient Local Customization

3. Lack of Data to Drive Programming and Dissemination

NTC strategically selected high-need partner sites that face these scale-limiting barriers as a way to further test and refine its model to better meet the needs of systems in diverse settings. The following table provides an overview of the number of schools, teachers and students that will be supported by year 5 of the grant when it is at scale.

Table 2: Partner Site Populations & Demographics

Partner Sites	Schools*	Teachers**	Students**	%FRLP
Southeast/South-Central Education Cooperative (SESC)	40 ES, 13 MS, 8 HS	1,721	25,785	77%
Niswonger Consortium of School Systems in northeast Tennessee (TN Consortium)	40 ES, 13 MS, 8 HS	1,724	25,702	49%
Houston Independent School District	30 ES, 12 MS, 7 HS	2,244	38,397	78%
Hillsborough County Public Schools	30 ES, 12 MS, 7 HS	2,940	43,126	58%
TOTAL	220	8,629	133,010	66%

*Does not include special education, vocational, or alternative schools.

**Teacher and student estimates generated from district data on teacher ratios.[43]

Rural KY SESC: Half of districts have some form of IC, but training for many coaches is limited. In some districts, the coaches are assigned to specific schools, while other districts assign coaches to content areas and work districtwide. Generally, coaches have limited training and support to optimize teacher support resulting in inconsistent and fragmented approaches.

Rural TN Consortium: In the 18 rural districts supported by the Niswonger Foundation, IC is fragmented and not part of a consortia-wide system. Coaching time is limited and often focused only supporting a few teachers in a building. Training also varies widely and has not been a systemic approach but rather based on grants for areas of specialization, such as literacy.

Urban LEAs - HISD & HCPS: Similar to many urban districts, coaches are housed across multiple central office departments with little coordination or alignment. Training varies widely and lacks a focus on deep understanding of adult learning and merging rigorous standards with the social emotional needs of all learners. In some instances, strong support is provided to

coaches, but the actual coaching deployed to schools varies considerably and lacks coherence, where multiple coaches may work with a single teacher sharing unaligned frameworks and strategies and other teachers are never supported. In HCPS, NTC will work with a group of 50 high-needs "opportunity" schools which are identified based on student performance and specified for additional support and randomly assigned to receive NTC support or the status quo. In HISD, NTC will work with district partners to select the group of schools to randomize so those receiving support are district early adopters. The study will ensure local contextual factors are considered in school selection, such other district initiatives or feeder patterns.

The five key components of NTC's IC model, outlined in the logic model (Section E) and based on NTC's conceptual framework (Section B), will provide solutions to each barrier in partner sites as follows:

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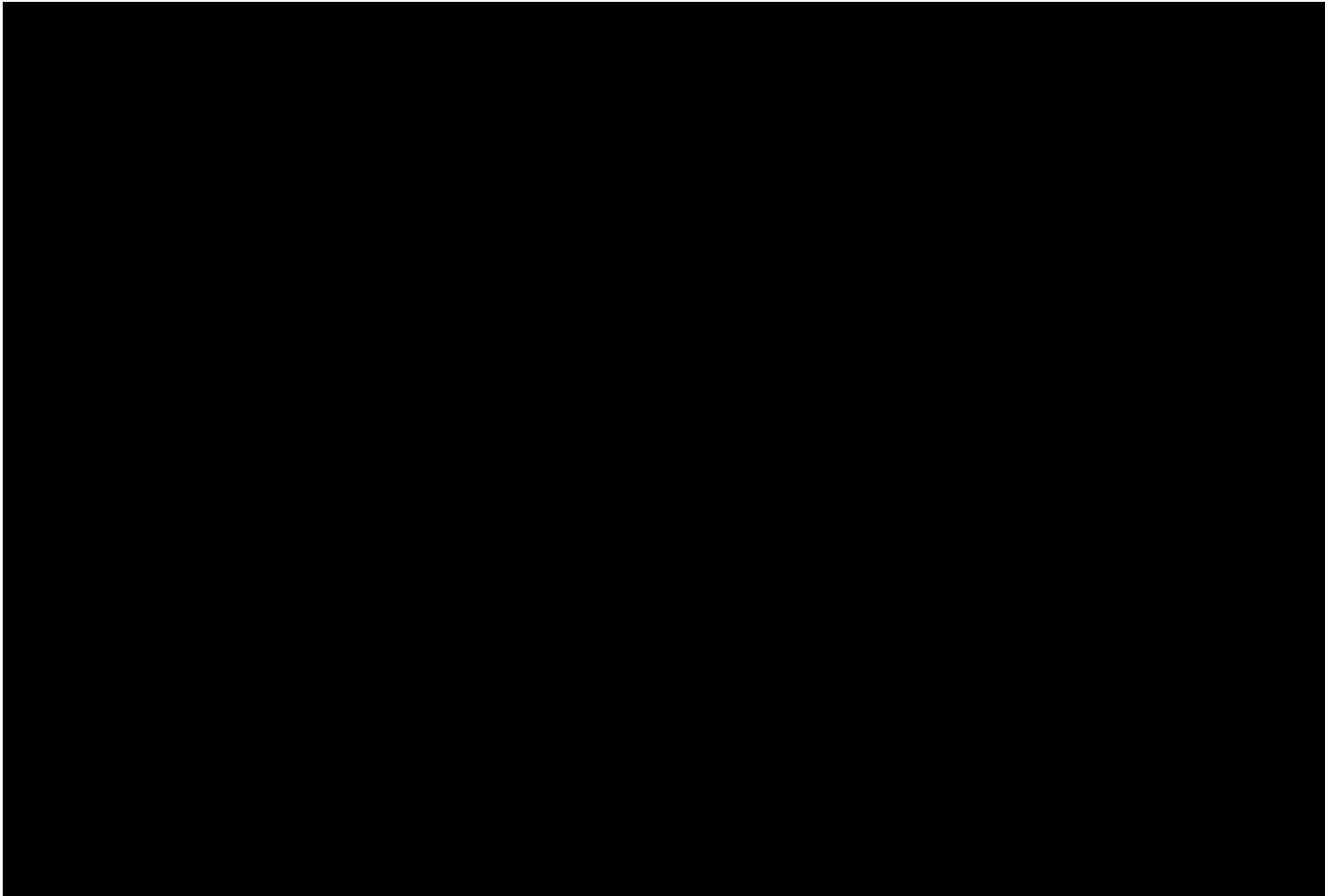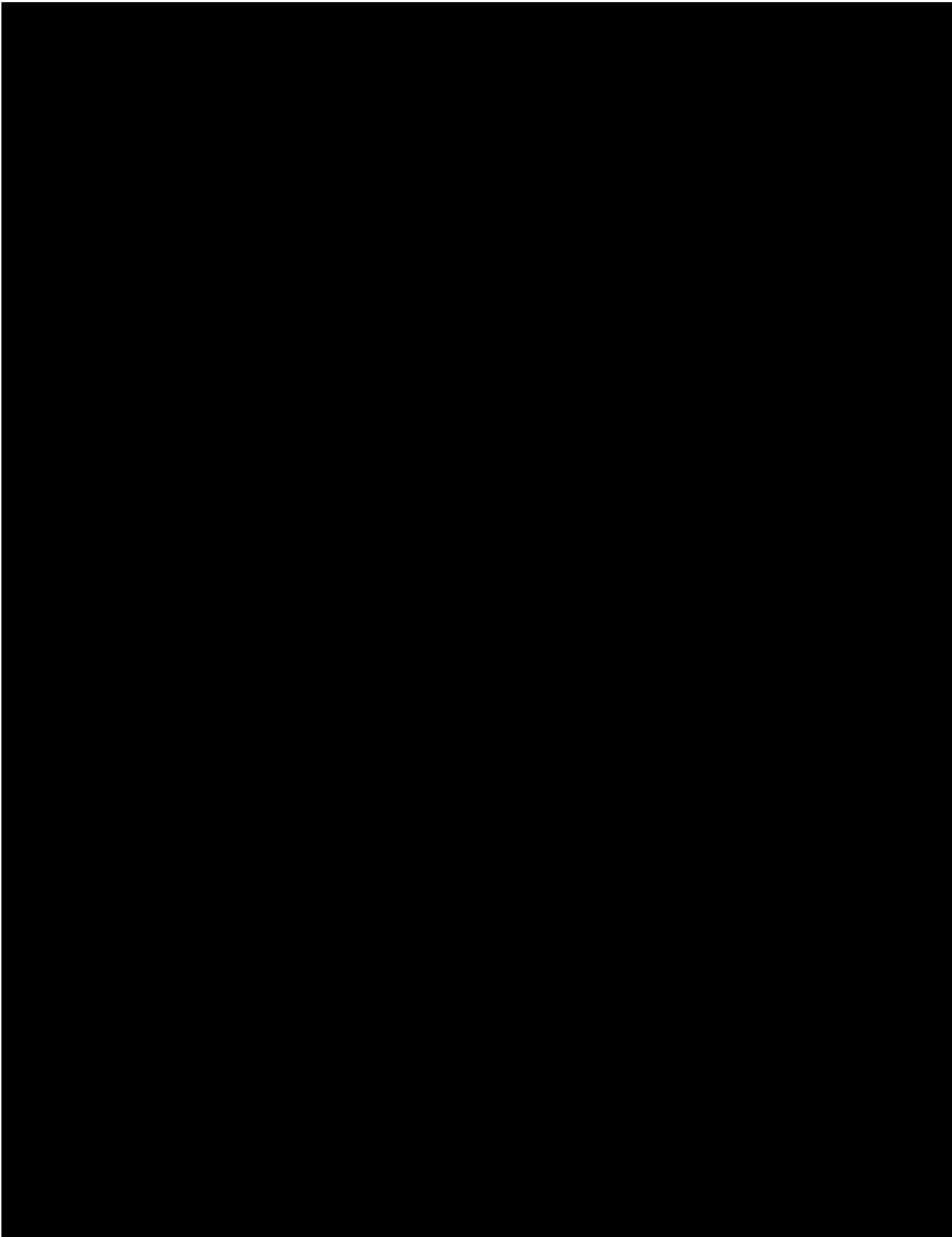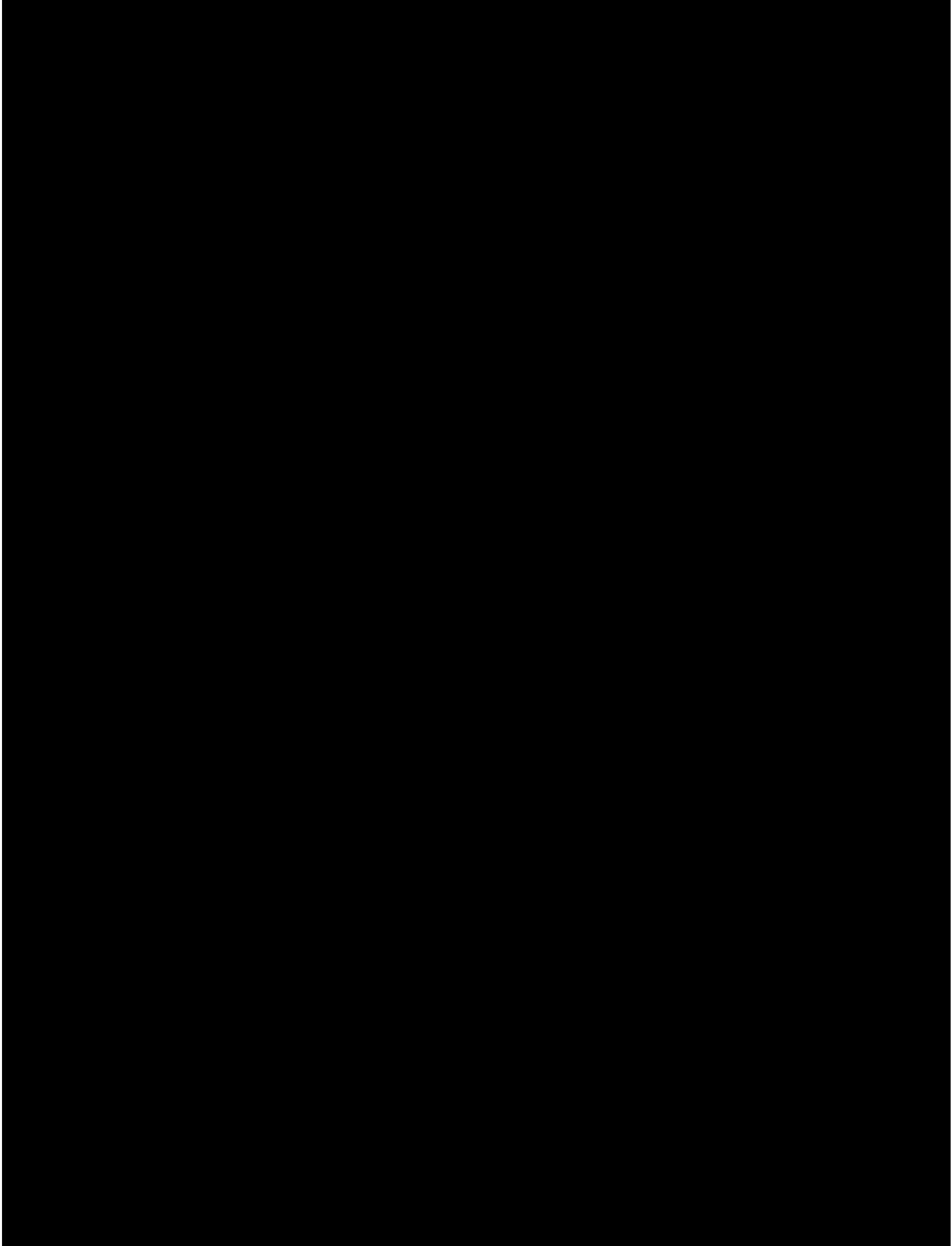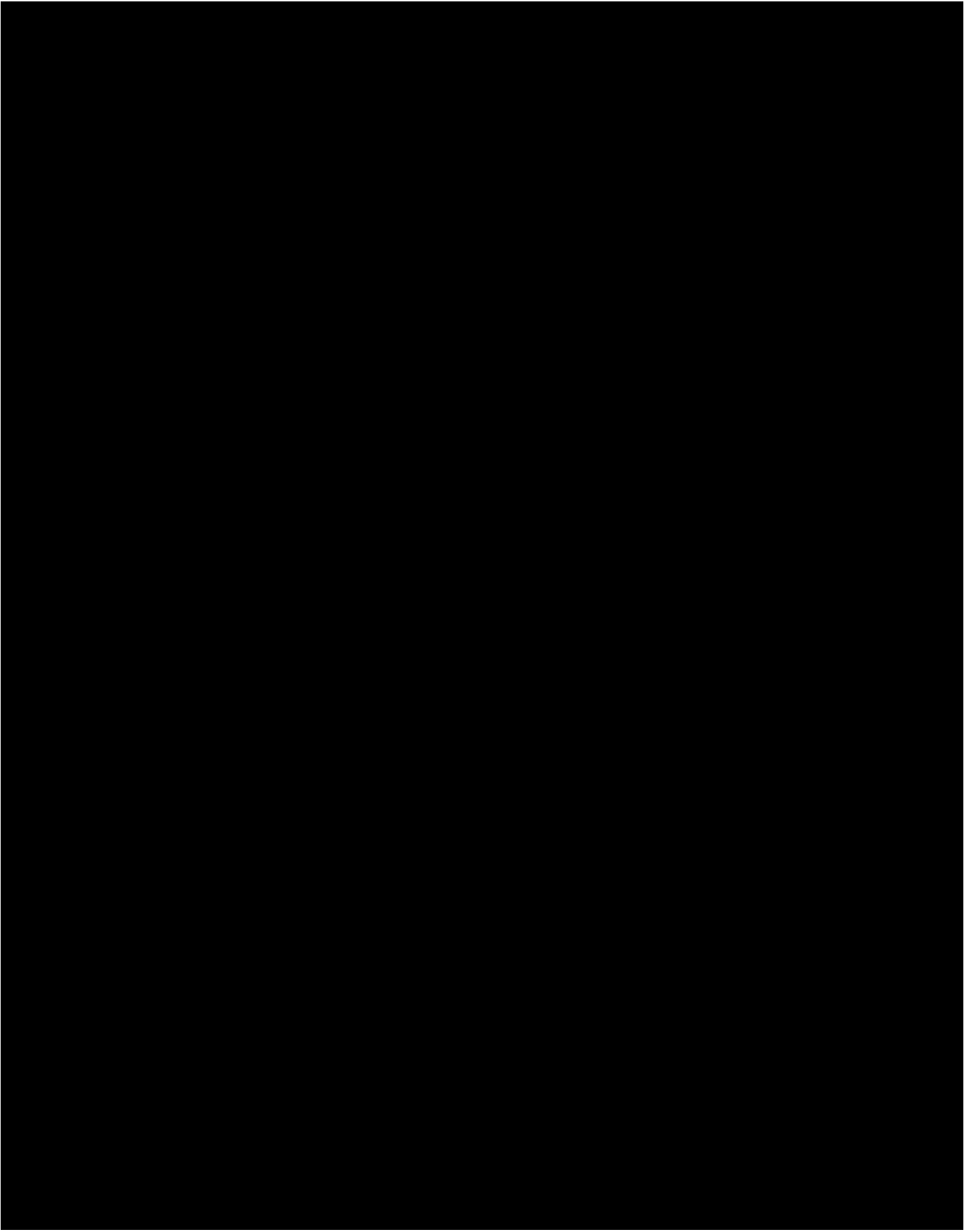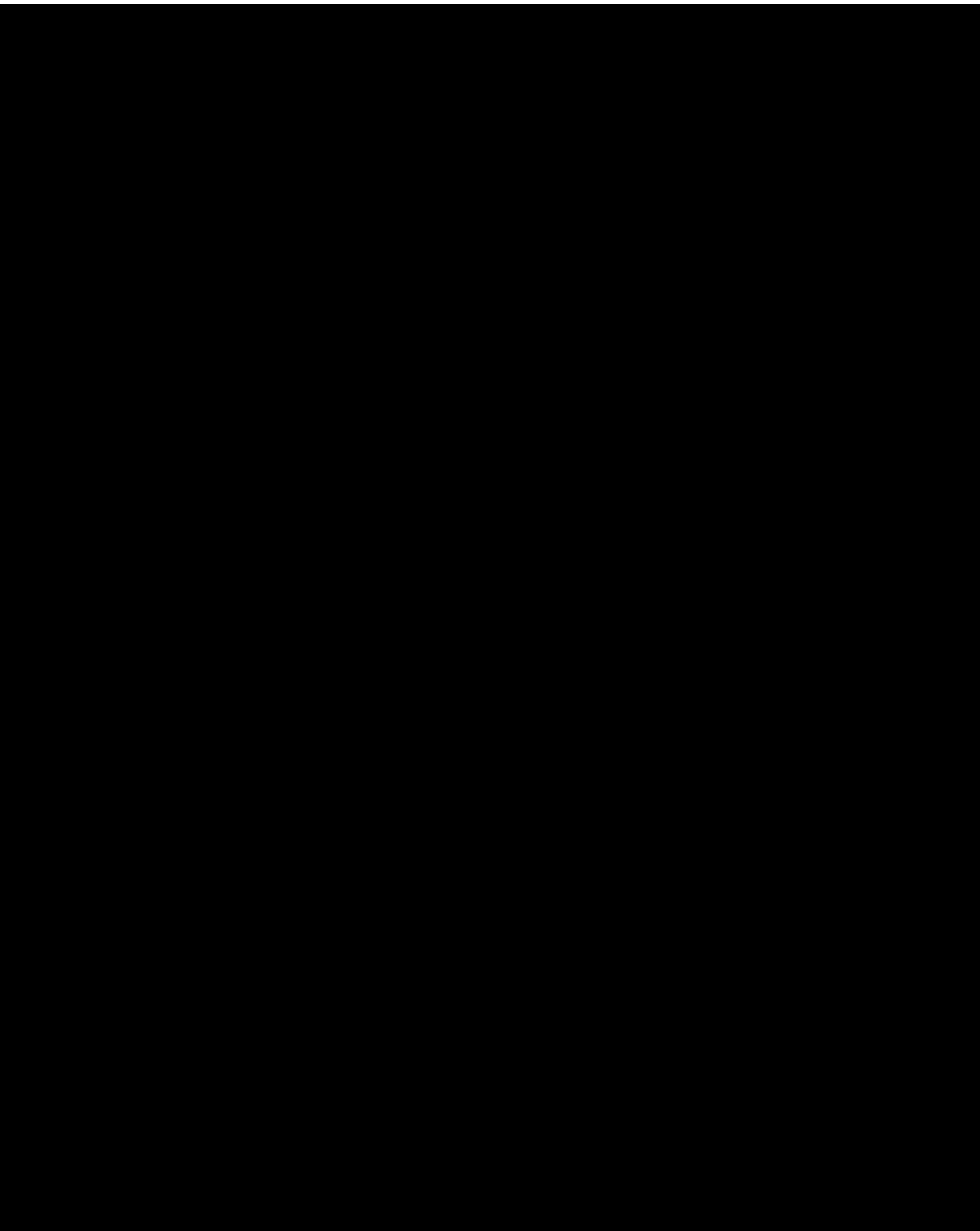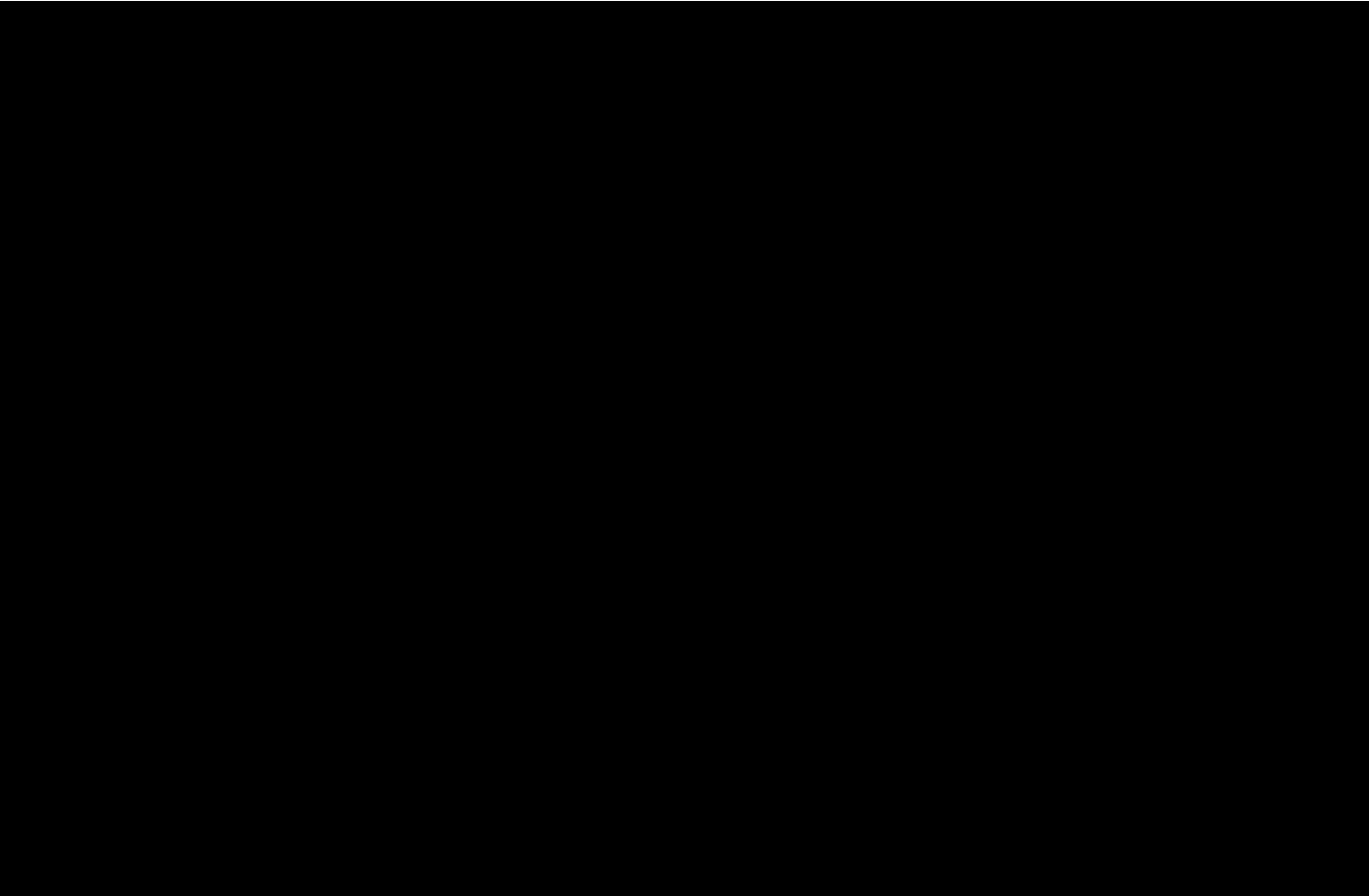
C2 (Increased Efficiency): NTC and its partner, ERS, will specifically address efficiencies regarding how to help sites manage resources for sustainability. The availability of resources is not necessarily the key issue in providing high-quality teacher development that impacts student learning, rather it is how those resources are utilized with cohesion most effectively. LEAs are often stymied in traditional approaches to budgeting and resourcing that do not maximize creative solutions or provide adequate resources to the neediest schools and students. Furthermore, much of the teacher development purchased is vendor-dependent (versus capacity-building), and when the contract or grant ends, the expertise and capacity also disappears, leaving another gap without demonstrable or lasting impact on student learning.

ERS will analyze resource use across sites to understand opportunities to realign resources and other enabling conditions to better support IC at the school and system level, and

will illustrate how schools can reorganize schedules, staffing, and the budget to ensure coaches and teachers have sufficient time for PLCs and 1:1 coaching with observation and feedback. ERS will then focus on five resource-intensive areas of school system design: School Design, Teaching, Leadership, Funding & Portfolio, and School Support & Accountability. ERS will work with each site during the grant to provide the following supports:

System Snapshot: ERS will perform a "System Snapshot" diagnostic that will examine current resource use and enabling conditions, and where there are opportunities to improve overall efficiency to help sustain the IC model. Snapshot data might highlight the need to reorganize school level resources to ensure sufficient time for content teams to engage in collaborative lesson planning and professional learning led by the instructional coach.

Prototypes: ERS will create prototypes, which will model new ways of organizing resources at the school level that will support NTC's IC model and will specifically respond to the resource use challenges highlighted in the Snapshot diagnostic. These in-depth playbooks will show specific strategic options for how schools can organize within the resources they have, including changes to the schedule, budget, and staffing, *and* the proposed options would be scalable system-wide. Many times, when new coaching models are explored, resources are layered on, and models are designed in ways that work in a small number of sites, but could never be scaled across the system due to funding or policy barriers. Prototypes are designed deliberately to illustrate models that are viable at scale given existing resources in the district.

Approach by district type: ERS believes the System Snapshot diagnostic and prototypes would be a powerful set of supports to *large* districts implementing a coaching model, given their unique challenges with scaling. Together, they would provide the system with powerful data, insights, and tools that would help leaders make the resource and structural changes needed

to support the coaching and connecting professional learning sustainably and system-wide. While this approach makes sense for HISD and HCPS, ERS would also adapt the snapshot and provide targeted problem-solving support to the rural sites in the study, focused on extending and supporting the application of the tools and learnings from the snapshots and prototypes.

At the end of the collaborative support, instructional coaches will have clearly defined roles and new sets of expertise, teachers will have access to high quality, job-embedded coaching, and school leaders will have the underlying, *sustainable,* school design structures in place to utilize IC to its full effect in the delivery of instruction.

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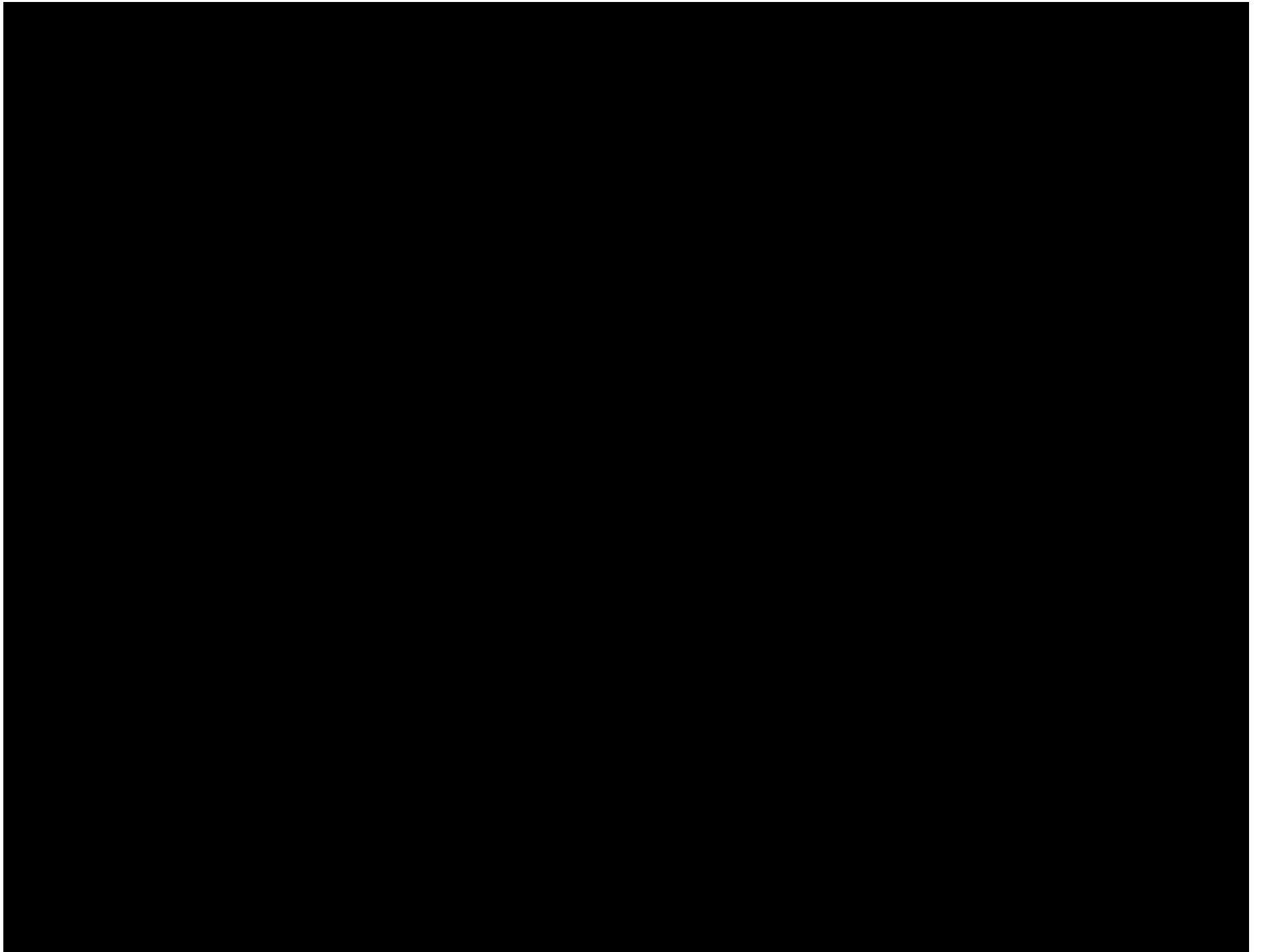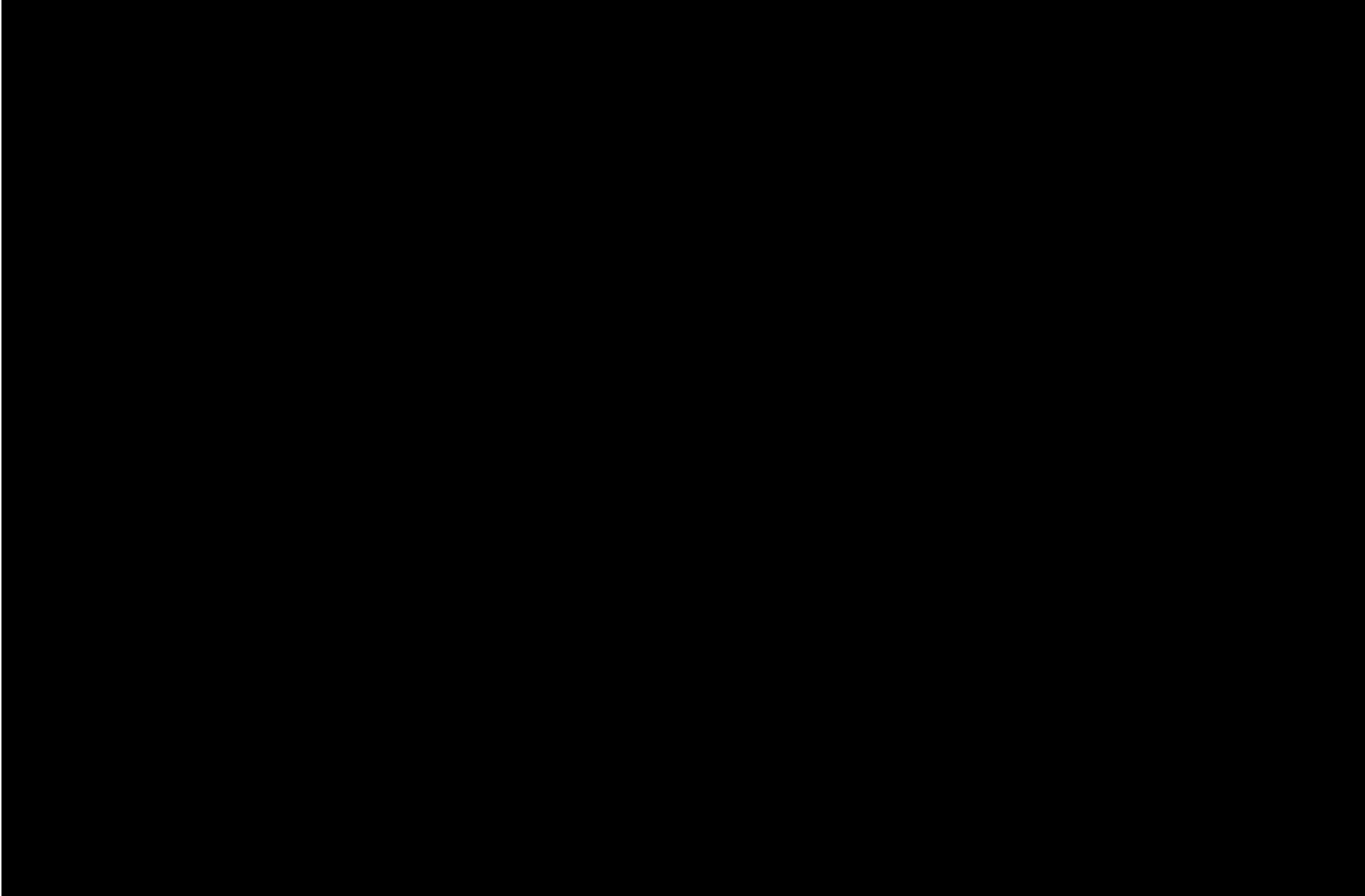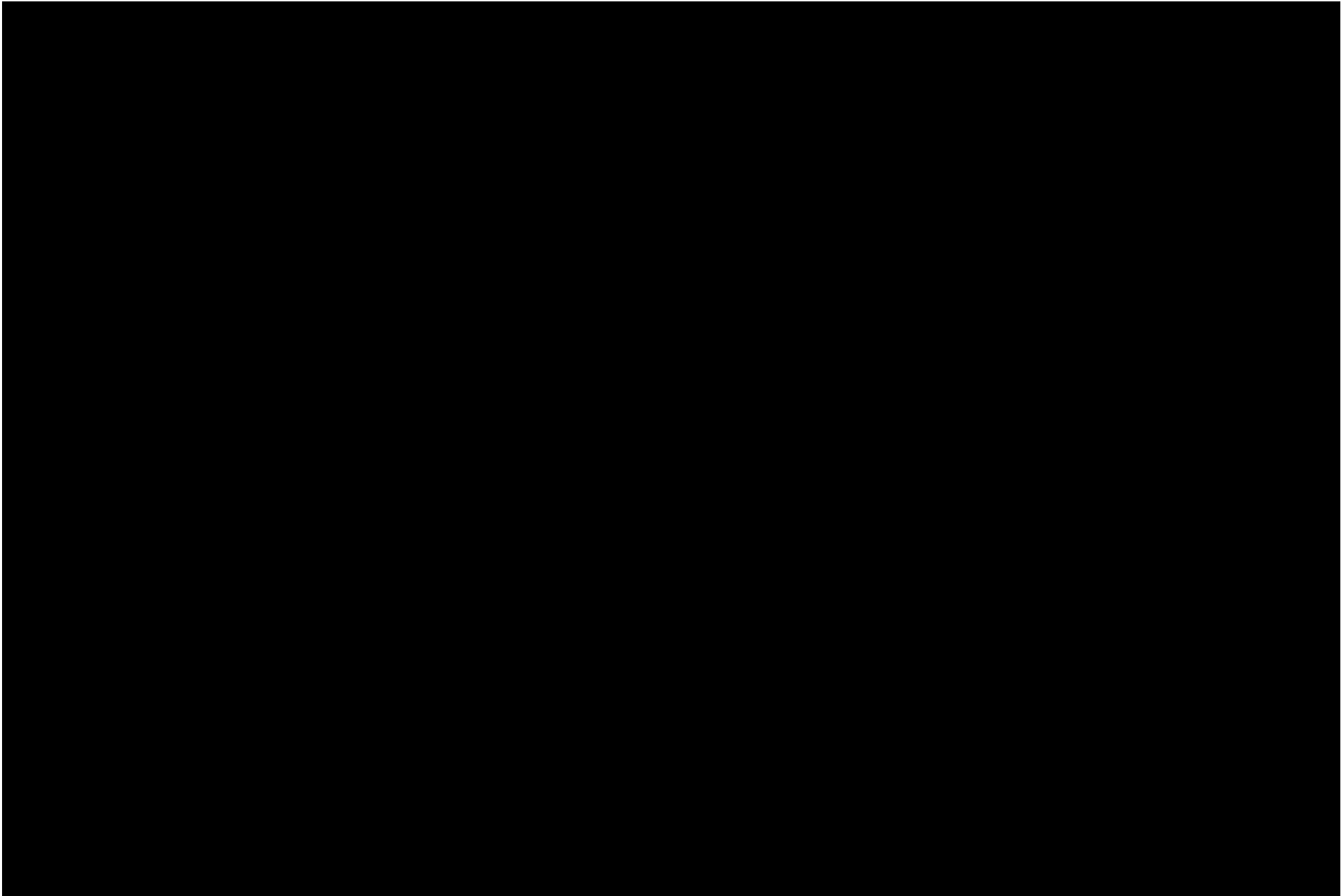
NTC's growth over the past 20 years has been steady, beginning with a handful of partners sites in 1998 to now implementing programs in over 400 partner sites across 27 states. During the 2017-18 school year, NTC served approximately 6,500 coaches, 24,000 teachers, and 1.8 million students. NTC's past federal grant awards, along with its current partnerships in both high-need urban LEAs, such as New York City and Miami-Dade County, and consortia of rural LEAs, such as those in Iowa and Wisconsin, indicate its capacity to expand nationally and adapt to different contexts.

Management Capacity: NTC has a staff of over 100 FTE ("full-time equivalent" employee) and 16 FTE located in its business and finance departments. NTC's current annual operating budget is ███████ which includes a healthy mix of private, federal, and local dollars. Current revenue is derived from approximately 45% percent private philanthropy, 32% federal grants and 23% contracts. NTC has assigned staff who have prior experience implementing federal grants and deep experience leading partner sites in adoption of its model, which has led to NTC's ability to achieve the strong evidence necessary to apply under this priority. NTC's effective management of federal grants since our SEED and i3 Validation awards in 2012 led to its ability to achieve the strong evidence necessary to apply under this priority.

Qualified Personnel: NTC and its partners bring a wealth of expertise in education and have a dedicated group of educational leaders and managers to execute this project. The NTC staff dedicated to this project represent NTC's top talent. NTC is confident that collectively, this group will be able to meet the grant goals, scale across the sites, and produce sustainable teacher development programs that improve teacher practice and student learning. Below is an outline of staff members and their specific roles on the project (see Appendix B for resumes). *Co-Project*

Directors (PD) will be NTC Vice President of Program Strategy & Development, Laura Baker and Chief of Impact and Learning, Dr. Ali Picucci.

Co-Project Director, Laura Baker, will oversee the strategic implementation of the work, manage the staff implementing the project, lead the Management Council, and have ultimate responsibility and authority over the project. *Co-Project Director and Evaluation Director,* Ali Picucci, PhD, will oversee program quality and implementation through assessing progress towards meeting the target benchmarks set as the project's measures and provide feedback for improvement. *Project Finance Director,* Ellen Kendrick, is NTC's Senior Budget Analyst and has been overseeing NTC's existing federal grants since 2015. She will ensure the project correctly manages matching funds, draw downs, invoicing with partners, and overall financial health of the project. She will also oversee the business and operations aspects of the project and manage the relationship with the Department of Education (see resume in Appendix). *Evaluation Co-Principal Investigators from SRI International (PIs and team),* Katrina Laguarda and Dr. Haiwen Wang, are co-PIs of SRI's evaluation of NTC's i3 Scale Up grant and NTC's SEED grant investigating IC in Volusia County, FL, and Shelby County, TN. Dr. Rebecca Schmidt and Lauren Cassidy will serve as lead quantitative analyst and lead qualitative analyst, respectively. Dr. Schmidt and Lauren are co-PIs of an evaluation of NTC's model of pre-service coaching coupled with two-year induction; Dr. Schmidt was co-PI of the evaluation of NTC's i3 validation grant. *The Impact Analyst (IA),* Pat Dougherty, will support partners with monthly and annual data gathering and reporting to assess implementation and improvement, as he currently does for federal grants. He will be charged with monitoring day-to-day implementation data across the sites. He has deep expertise in NTC implementation data and data analytics and reporting. *The Senior Program Manager (SPM),* Shelley Winterberg, will ensure that the program is

implemented with fidelity, manage timeline and deliverables, provide support to implementation staff, and coordinate implementation activities. *The Site Leads (SLs)* are Tammy Phuong for HISD, Michelle Robellard for HCPS, Jason Fulmer for SESC, and Milissa McClaire Gary for the TN Consortium. *The ERS Lead is* Genevieve Quist Green, Ph.D., Director of School Design, Education Resource Strategies for ERS, will lead the resource assessment to develop snapshots of districts and prototypes of best practices.

Support from the Funding Community and Partner Sites: NTC currently receives support from over 40 funders and enjoys the long-time philanthropic support of a vast network of large giving foundations, small family foundations, and corporations. Philanthropic support allows NTC to expand its impact, develop new products and services, and build organization infrastructure. NTC's partner sites demonstrate the highest commitment to implementation and sustainability of this work. (see Appendix for letters of support).

D3 (Potential for Incorporation Beyond Federal Funding): As described throughout the proposal, NTC's model was built as a capacity building, gradual release model. NTC's model is designed to be intensely collaborative and embeds gradual transition in program ownership to partners because it assumes from the outset that the goal is for the partner to implement the work beyond the grant period. This project focuses on change management, resource allocation, and building partner site capacity throughout each phase to reach district-wide and consortium-wide scale. NTC will gradually release implementation responsibilities to partner sites using methods that will ensure an aligned, partner site-owned strategy for supporting highly effective teachers that will influence student learning for years to come. NTC simultaneously builds principal capacity to ensure implementation translates at the school level and supports local initiatives. NTC's intentional focus on building leadership at every level in schools and partner sites

integrates NTC's sustainable strategies into the mindsets, beliefs, and practices of the educators it supports, positioning them to guide effective teacher development. Instructional coaches will continue to be employees of their partner sites and their growing expertise becomes part of an enriched pool of human capital. By having partner sites contribute to these costs, there will not be a human capital cliff at the end of the grant.

NTC and its partner sites will develop a MOU and an action plan with specific aims supporting each partner site's intention to implement, expand, and sustain their programs. NTC will provide direct technical assistance to partner sites on adapting and implementing the IC model within their own contexts. Locally delivered and tailored professional learning is presented by NTC in collaboration with the partner sites and will prepare sites to train new coaches for further scale and expansion. Additionally, NTC and partner sites collaboratively implement a program-level assessment that includes a continuum of program standards allowing partner sites to monitor progress and development. Researchers have found this collaborative process is key to the evolution of a shared vision and direction among participants.[46] The intentional modeling, collaboration, and gradual release of responsibilities ensures the capacity of partner sites to sustain all aspects of the work on their own beyond the end of the grant term. From day one, the partner site works closely with NTC staff to adapt NTC's gradual release approach to the local context using the following strategies: (1) Building deep knowledge of high-quality instructionally focused training by having the partner site sponsor and lead coaches attend coach training, including designated program leaders in national networks meeting twice a year to build communities of practice focused on implementation; (2) Inviting program leaders to attend NTC's national Presenter Institutes to learn how to deliver and facilitate the core coach

training program; and (3) Building a sustainability plan with executive sponsors and key leaders early in grant process.

By year 3, partner site staff will co-lead and co-present the training with NTC and in year 4 lead the training with NTC in the background. By grant end, partner site staff have built the skills and had the experiences with scaffolded support for the program to be a site-owned, sustainable model of aligned and impactful teacher development that impacts student learning.

D4 (Reasonable costs): As a national non-profit organization, NTC has engaged in a comprehensive cost model review to ensure costs are both reasonable and sustainable for partner sites. An ongoing 3rd party evaluation found that in Year 2, NTC's cost per student totaled ███████ a decrease from ██████ per student in Year 1. This calculation is based on the Year 2 expenditures (including Federal and non-Federal funds) of ████████ minus Year 2 evaluation costs of ██████ divided by the number of students served during Year 2 (133,410). NTC anticipates a continued decline in the overall cost per student as we continue to extend our reach by increasing the number of teachers and thereby students served during the spring of SY 2017-18 and throughout SY 2018-19. [47]

Preliminary results from a 2019 return on investment study conducted by a third party research firm found that NTC's professional learning program for new teachers yields a 22% return to the district, for every dollar spent. This is equivalent to a district saving nearly ████ after a 5-year investment (based on 100 new teachers each year, over 5 years).[48] The benefit from investing in TI lies in large part in the acceleration of teacher impact on student achievement and savings from increased teacher retention. The proposed total project budget is $15 million over 5 years, based on analysis of data from NTC's previous federal grants to ensure that costs will meet the needs of each site and overall goals of the project. The project design proposes to

frontload program costs of building infrastructure and training during the first 3 years and will allow for the gradual transfer of responsibility for program implementation from NTC to partner sites in years 4 and 5. This strategy of strengthening program leadership at the local level and decreasing costs by reducing NTC's participation has proven successful in NTC's other federal work. NTC's partner sites have joined this partnership because, at their highest levels, there is strong support for the program and a wish to scale it and take on ownership. Each of the partner have agreed that they will be prepared to sustain essential program costs once the grant funding ends in light of their conviction that this cost-effective model will improve teacher effectiveness, raise student achievement, and aid in reducing the financial drain that teacher turnover creates.

Section E: Quality of the Project Evaluation

New Teacher Center will contract with SRI International (SRI) to conduct the evaluation of NTC's IC model in all 4 partner sites. SRI will conduct an independent, rigorous evaluation that will document the extent of implementation and identify the impact of the NTC treatment on teachers receiving IC and on their students. The proposed evaluation features a RCT using clustered random assignment to assign schools to NTC's IC program or to status quo coaching practices. Schools assigned to the treatment group will receive NTC IC support in school years 2020–21, 2021–22, and 2022–23. Schools assigned to the status quo will serve as control schools (the delayed treatment group) for these years, before they receive NTC support in 2023–24. SRI will provide implementation feedback to refine the IC model in 2020–21, 2021–22, and 2022–23, conduct teacher and student outcome analyses in 2021–22 and 2022–23, and assess sustainability and replication in 2023–24. The evaluation will address the following key impact and implementation questions, reflecting the intervention's logic model [Exhibit B].

Main impact: Does NTC's IC program result in: (1) better teaching practices in the domains of classroom environment and instruction? (2) improved student achievement in math, science, and ELA? (3) Does the impact of NTC's IC program differ by student background (e.g., gender, minority status, FRPL status), teacher characteristics (e.g., teaching experience) or school settings (e.g., urbanicity, poverty level, grade level)? Mediation: (4) Which teacher practice outcomes mediate the relationship between the NTC's IC program and student outcomes?

Treatment-on-the-treated effects: (5) What is the impact of NTC's IC program on teachers who receive high-fidelity coaching? (6) Which components of IC (contact time, FAS tool use) are related to teacher and student outcomes? Implementation: (7) What are the core components of NTC's IC program? How does implementation of NTC's IC program differ within and across schools and sites? (8) What is the cost effectiveness of NTC's IC program relative to the status quo condition? (9) What factors support sustainability and replication across schools and sites?

E1 (Addressing What Works Clearinghouse Evidence Standards): As a multisite blocked cluster-randomized trial, SRI's main impact analysis is designed to provide evidence that will meet WWC group design standards without reservations. During the planning period (2019–20), SRI will support NTC in recruiting 50-60 schools in each of the 4 sites. SRI will collect baseline data on all schools and will randomize them to either the treatment or delayed treatment condition in late summer 2020.

School randomization will be blocked on site, school grade level (elementary, middle, and high), and poverty level (percent free/reduced price lunch).
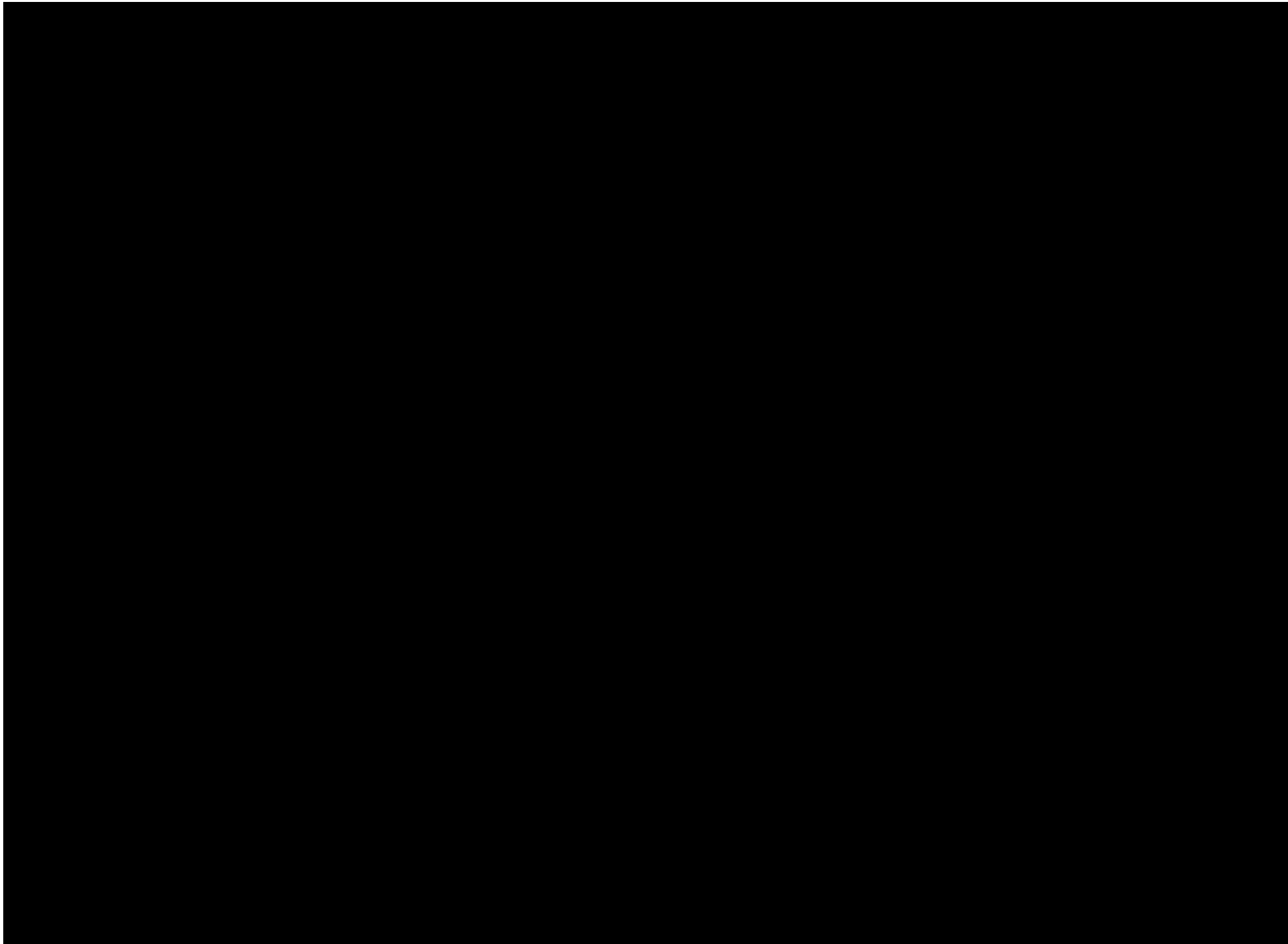
SRI will estimate the impact of the NTC IC model on teacher and student outcomes after 2 and 3 years of implementation respectively. To ensure that the study does not include student joiners, SRI will establish the baseline sample by collecting rosters of teachers and students prior to randomization. SRI will collaborate with NTC on recruitment and data collection strategies to minimize overall and differential attrition (e.g., clear communication prior to randomization, financial incentives for all data collection activities, and local program leads who will support the evaluation).[49] In addition to estimating the overall impact of NTC's IC program, SRI will explore the effect of the model on teachers who receive high-fidelity coaching, which is designed to meet WWC standards with reservations, as well as the relationship of contact time and tool use with teacher and student outcomes.

E2 (Guidance on Effective Strategies for Replication): SRI will document NTC's work to replicate its IC program across multiple contexts and with diverse populations through analysis of coaching logs, school, teacher and coach surveys, and site visits. SRI will study (a) the resources NTC invests in developing the expansion sites' capacity and the sites' experience with the supports, (b) school leader development and school-level supports for high-quality coaching, (c) coaches' changing practice, and (d) teachers' experience of high-quality coaching. For each of these topics, researchers will pay close attention to local contextual factors that support or inhibit successful replication, documenting variation in implementation and adaptation to local needs. Final analysis will triangulate the local site contextual data with site-level implementation fidelity and program uptake data and impact estimates with an eye toward identifying critical project components that can be replicated and sustained in various conditions (see below for more detail on implementation fidelity and impact estimates and related data sources). A cost effectiveness analysis will provide estimates of the cost required to achieve the program's

impact, relative to the status quo, and qualitative data collection will examine the facilitators and challenges to sustaining the model. Together, the analyses will help define the conditions and strategies that are suitable for replication.

Cost effectiveness: SRI will conduct a cost effectiveness study to evaluate the impact of NTC's IC program against the costs associated with the intervention. SRI will build on the site-level budget analysis conducted by ERS to help project sites sustain coaching positions to design data collection for the cost effectiveness study. For both the treatment and delayed treatment groups, SRI will collect cost information using the ingredients method,[50] identifying a master list of program components through a review of program documents, ERS's site-specific budget models, and interviews with partner sites and principals. Using data collected from individual sites and resources such as the "Cost Out" tool developed by Columbia's Teachers College, analysts will determine the value of resources required for implementation. SRI's analysis will calculate cost-effectiveness ratios comparing the cost of program inputs to student-level outcomes that can be achieved for those costs, for both NTC's IC program and the business as usual condition.

Qualitative Data Collection on Program Implementation and Replication: SRI will conduct site visits to examine how NTC's IC program is replicated and sustained in the different district contexts. Evaluating the success of scaling an intervention must consider how deeply the model was implemented (i.e., the extent to which the new practices become entrenched for coaches and teachers), how the practices and values inherent in the model spread beyond the initial participants, and whether the participants take ownership of the practices and sustain them once grant funding ends.[51] Site visits to treatment and delayed treatment schools in the 3 implementation years (2020–21, 2021–22, and 2022–23) will offer formative feedback to NTC

to supplement the implementation analysis, and provide insight into the site's vision for sustaining coaching and plans for replicating the model in delayed treatment schools in 2023–24.

The evaluation's delayed treatment design provides the unique opportunity to examine the shift of ownership of NTC coaching from NTC to the sites by investigating sustainability in treatment schools and replication in control schools in the year following the RCT, 2023–24. Site visits in this year will examine the spread of NTC tools and strategies within schools, the extent to which coaches', teachers', and principals' beliefs about coaching change, the extent to which coaches exercise instructional leadership on school leadership teams, and the extent to which partner sites and principals support the NTC's IC program. SRI will also investigate how NTC is preparing LEAs to lead this work once the grant ends.

Each year, SRI will visit a purposeful sample of 10 schools, sampled from participating districts across all 4 sites representing a range of local contexts. In 2020–21, SRI's sampling strategy will focus on treatment schools with high-fidelity implementation, as well as 1 or 2 where implementation is weak, based on Learning Zone implementation data (see section E4 below). In 2021–22 and 2022–23, the treatment sample will include 10 schools selected based on the prior year's site visit, the previous spring's survey, and nominations by coaches or district staff. In 2023–24, during the delayed treatment period, SRI will return to 5 treatment schools to investigate how coaching practices are sustained in the years after the intervention. In 5 delayed treatment schools, SRI will assess implementation and partner site support for replication.

Within each school, SRI will interview principals, coaches, and a sample of 6-8 teachers of core content areas who received IC, as documented in Learning Zone. SRI will also interview partner site school leaders in each site (e.g., those responsible for hiring, induction, coaching, professional development, and curriculum and instruction) as well as any partners supporting the

site in replicating and sustaining the model. SRI will develop semi-structured interview protocols aligned to the research questions and tailored to specific respondent types. Sample interview topics and constructs include teacher buy-in and receptivity to coaching, the nature of coaching (frequency, focus, and usefulness), coaching training/supports, and contextual factors that affect implementation. Interviews will be recorded and transcribed.

Researchers will follow a standard protocol to analyze interview data within each site (see Appendix H1 for details). Findings from this qualitative analysis will be used to interpret and explain implementation fidelity measures (Section E4) and to provide formative feedback to NTC and to the project sites to guide replication and scaling in in the project's final year. The research team will compare implementation data across the sites to inform replication of the NTC's IC program, including how and why implementation may vary in different contexts.

Formative Reporting to NTC and Partner Sites: SRI's evaluation will include regular, periodic reporting to NTC and the partner LEAs to provide actionable feedback to support mid-course corrections in program design and delivery and to inform efforts to codify and replicate the model during the delayed treatment phase and beyond the grant period. In addition to supporting biannual reporting on implementation fidelity to site-level stakeholders, and participation in annual stakeholder engagement meetings, SRI will prepare a formative memo for NTC after each round of site visits, drawing on all sources of data on program implementation. In addition, SRI's annual reporting to NTC at the end of each year of the grant period will review progress toward program goals, drawing on both quantitative and qualitative data sources.

E3 (Valid and Reliable Performance Data on Relevant Outcomes): All outcomes data will be collected identically across sites for both treatment and control conditions. Student outcomes include state standardized assessments of math, science, and ELA achievement collected from

states or LEAs. Teacher outcomes include measures of environment and instruction from classroom observations.

Impacts on student achievement: *Student outcome measures:* To assess students' achievement, SRI will collect annual student-level test scores on state assessments during the RCT. The study will use scores from each site's respective state standardized tests in ELA, math, and science. SRI will collect historical student achievement data to establish equivalency between treatment and delayed treatment schools at baseline and to control for students' prior achievement in impact estimation. The analytic sample for the study's main impact analyses will include all students in tested grades and subjects in the study schools. See Appendix H2 for details on the state student achievement assessments, years, and grade levels to be included in these analyses. *Analysis of student outcomes:* As the confirmatory intent-to-treat analysis, SRI will conduct analysis on student test scores in elementary and middle schools, and on students taking and passing ELA, math, and science courses in high school after 2 and 3 years of implementation. Student test scores from spring 2020 will serve as the baseline, and those from spring 2022 and spring 2023 will be outcomes to estimate the impact of NTC's IC program after 2 and 3 years of implementation respectively. For each subject, researchers will standardize test scores at each grade level at each site and conduct analysis combining all sites and all eligible tested grades in elementary and middle schools, while adjusting for grade-level effects (see Appendix H3). This analysis will involve positing a two-level hierarchical model with student and school levels, with NTC program impacts estimated at the school level (see Appendix H3). At the high school level, the outcomes will be having taken and passed specific courses at certain grades, and a similar two-level hierarchical logistic model will be posited to look at the impact of NTC's IC program on these high school student outcomes. *Moderation analysis for student*

outcomes: To examine the potential differential impact of NTC's IC program on different students and schools, SRI will add interaction terms between the NTC impact and student and school subgroup indicators to the hierarchical models for the analysis of student outcomes, building one interaction model for each moderator. *Power analysis for student outcomes:* The minimum detectable effect size (MDES) for math and ELA test scores in elementary and middle schools is 0.11, assuming an average of 300 students per school in 180 elementary and middle schools (with half in treatment, allowing a 5% attrition from the 190 elementary and middle schools included in the study); that 16% of the variation in student test scores lies in the school level; and that student pretest score and other covariates explain 60% of the between-school and 50% of the between-student variation. The MDES for the science test outcome is 0.12, assuming an average of 100 students tested in science per school in 180 schools.

Impacts on teacher practice: *Teacher outcome measures:* The evaluation will include classroom practice measures as teacher outcomes. SRI will conduct classroom observations of a random sample of teachers in grades and subjects targeted for coaching under the NTC IC model in both treatment and delayed treatment schools. Observers will use the Danielson Framework for Teaching (FFT),[52] and externally validated instrument that measures two domains: classroom environment and instruction. The reliability of FFT scales ranges from 0.6 to 0.84 (see Appendix H4 for a list of the scales and items that make up the scales). SRI will analyze the impact of NTC's IC program on teacher classroom practice after 3 full years of implementation, using spring 2023 observation as the outcome and fall 2020 as the baseline. *Teacher outcomes sample:* For classroom observations, SRI will randomly sample 450 teachers of tested ELA, math, and science classes. Observing all tested ELA, math, and science teachers maximizes the overlap of teachers between teacher and student outcomes analyses to facilitate the proposed mediation

analyses._Teacher outcomes analysis:_ Researchers will pool data across sites to conduct the impact analysis, positing a two-level hierarchical model (see Appendix H3 for detail) with teachers as the first level and schools at the second. The treatment effect will be estimated at the school level. _Power analysis for teacher outcomes:_ Assuming a total of 300 observed teachers (450 at baseline, with 33% attrition) in 150 schools, half treatment and half delayed treatment, and assuming that 10% of the variation in outcomes is between schools, and 30% of school-level and 20% of student-level variation is explained by baseline measures and covariates, the observation analysis minimum detectable effect size (MDES) will be 0.30.

Mediation analysis: SRI hypothesizes that teacher classroom practices mediate the effect of the NTC's IC program on student outcomes. If the study detects a statistically significant impact of NTC's IC program on student outcomes, SRI will estimate such mediation effect. To do so, SRI will adopt the mediation conceptualization and analytic framework of Pituch, Murphy, and Tate,[52] which will test whether the mediation path from the intervention to each of the teacher outcomes and further to the student outcomes is statistically significant.

Exploratory analysis of treatment-on-treated impacts on student and teacher outcomes: To explore the impact of NTC coaching on individual teachers and their students, SRI will identify teachers receiving high-fidelity coaching in the treatment schools (by dosage, instructional focus, and use of FAS tools). For treatment-on-the-treated impacts on teacher outcomes, SRI will posit a similar model to that of the overall teacher impact analysis. For treatment-on-the-treated impacts on student outcomes, SRI will identify tested students linked to teachers who have received coaching in both treatment and delayed treatment schools in year 3, and posit a three-level HLM model with students nested in teachers nested in schools, comparing these teachers with teachers who receive coaching under status quo conditions in delayed

treatment schools (see Appendix H3 for detail). SRI will collect coaching caseloads from delayed treatment schools as part of its annual spring coach survey.

E4 (Key Components, Mediators, Outcomes, and Implementation): The proposed evaluation is designed to measure implementation of the project's key components, mediators, and outcomes of NTC's IC program as depicted in the logic model. A prerequisite to interpreting findings about the impact of a program is establishing whether the key components of the program were implemented with fidelity. NTC's conceptual model upholds that vision of developing systems-level capacity, supporting school leaders to create school-level conditions that support high-quality coaching, developing and supporting instructional coaches, engaging teachers in sustained coaching cycles of instructional planning, observation and feedback, and analysis of student work, and regular review of performance measures and formative data with key stakeholders will lead to more intensive and instructionally-focused coaching experiences and improved teacher practice and ultimately increased student achievement. SRI has collaborated with NTC to specify meaningful and measurable indicators of its 5 key program components and thresholds for high, medium, and low implementation fidelity for each (see Exhibit H5.1 in Appendix H5 for a representative selection from more than 20 program components and indicators). These annual performance measures, coupled with the qualitative data collection described above, will form the basis of the evaluation's annual formative reporting to NTC and partner LEAs.

Data Sources: *Learning Zone coaching logs:* Treatment coaches are expected to log their interactions with teachers and tool use in Learning Zone, which will provide data on PLC participation, coaching frequency, and the content of coaches' interactions with teachers. Online coaching logs will provide implementation data on all treatment coaches and their teachers, but

not on participants in delayed treatment schools. *School, teacher, and coach surveys:* Annual surveys of school leaders in delayed treatment schools during the 3-year RCT will identify teachers who receive coaching, both one-on-one and in PLCs, for use in treatment-on-the-treated impact estimates. Data on coaching caseloads (both one-on-one and in PLCs) in treatment schools will come from Learning Zone. SRI will design the survey of delayed treatment schools to match the Learning Zone interface, so that data on caseloads is comparable across treatment and control. Annual surveys of teachers and coaches will track teachers' interactions with instructional coaches (either one-on-one or in the context of PLCs), the frequency and duration of coaching interactions, the nature of coaching, NTC tool use, and other supports. SRI will replicate existing validated and reliable survey scales that measure specific implementation components from NTC's IC program. Differences between treatment and control on key survey measures will allow the study to assess the extent to which teachers' experience of NTC's IC program differs from teachers' experience of coaching under the status quo. The teacher survey sample will include all teachers of core subjects in grade levels targeted for coaching by the partner sites, in both treatment and delayed treatment schools. The coach survey sample will include all NTC-supported instructional coaches in treatment schools and in delayed treatment schools. NTC will administer the surveys to teachers and coaches in all 4 years of the study via their secure online survey platform. SRI will follow up with non-respondents and offer incentives to ensure high response rates. SRI will use factor analysis to create reliable scales that describe coaching activities for treatment and delayed treatment teachers.

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