SRI Education

Partnership Meeting

Student Success in Mathematics Partnership (SSMP)

June 2018

REL APPALACHIA
Regional Educational Laboratory At SRI International

Today's Meeting Goals

- Update the progress of SSMP projects 2017/18, 2018/19
- Review the research agenda, logic model, and data catalog
- Discuss proposal development, digging deeper into the logic model to inform proposal planning
- Explore and discuss mathematics teaching practices to inform planning of the Professional Learning Models (PLM) project
- Schedule meetings and activities for July through December

SSMP Activities and Projects 2017 though 2019

Student Success in Mathematics Activities (Year 1)

- **Quarterly Meetings (Location: Virtual)**
  - Networking, Strategy Sharing, Needs-sensing, Advising ✓
  - Year 2 Annual Planning ✓
- **Establishing Strategic Partnership Work**
  - Partnership Logic Model Workshop (F-to-F: Harrisonburg) ✓
  - Research Agenda Setting Workshop A & B (F-to-F: Harrisonburg and Webinar) ✓
  - Data Catalog Development – Phase 1 (On-going) ✓
- **Event on Importance of Algebra I (F-to-F: Harrisonburg)** ✓
- **Applied Research Project**
  - VLDS Data Request and Data Download ✓
  - Data Management and Analysis ★
  - Preliminary Results

Student Success in Mathematics Activities (Year 2)

Quarterly Meetings (Location: Virtual)

- Networking, Strategy Sharing, Needs-sensing, Advising
- Networking NCSM: Tues, Apr. 24 [Update]

Establishing Strategic Partnership Work

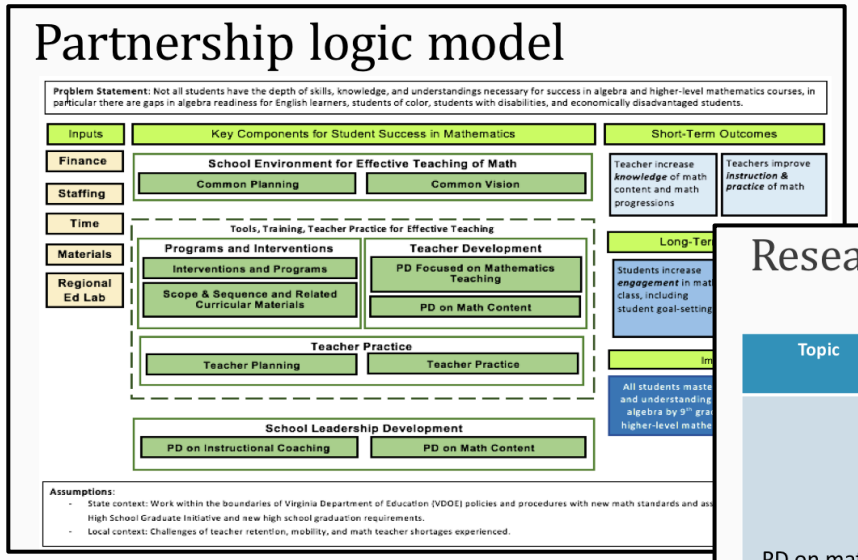
- Implementing a Professional Learning Model (Mathematics Workshop) ★ Proposal planning and support meeting

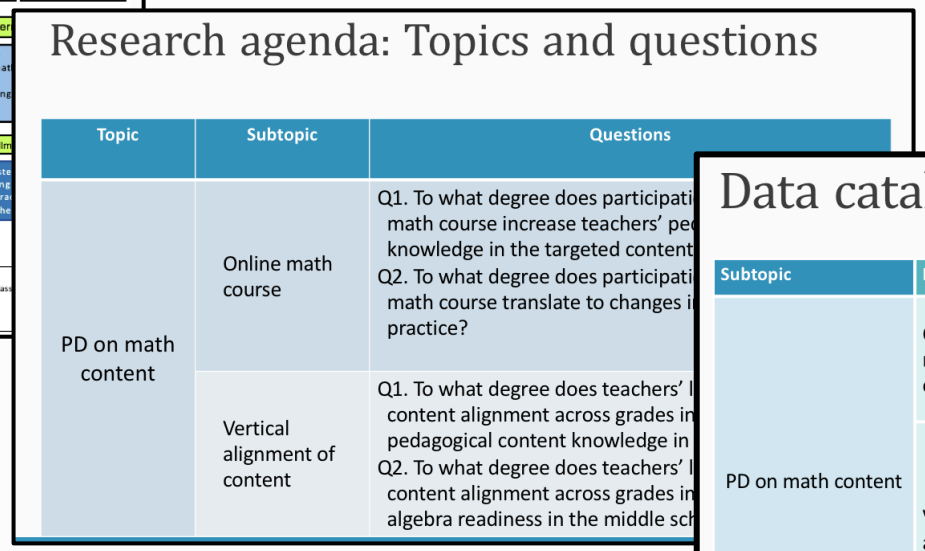
Webinar on Importance of Algebra I (October)

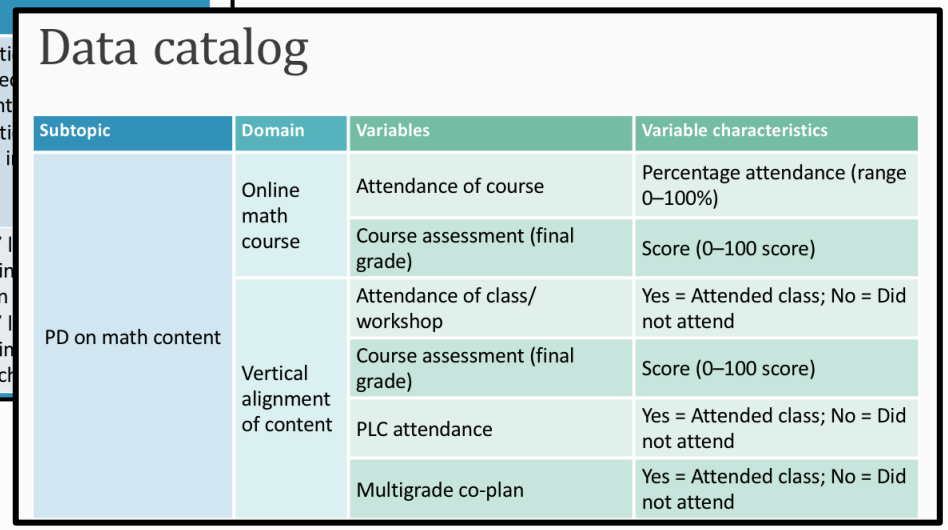
Applied Research Project (cont. from Year 1)

- Data Management and Analysis
- Preliminary Results
- Report
- Additional Analyses - Late 2018/2019

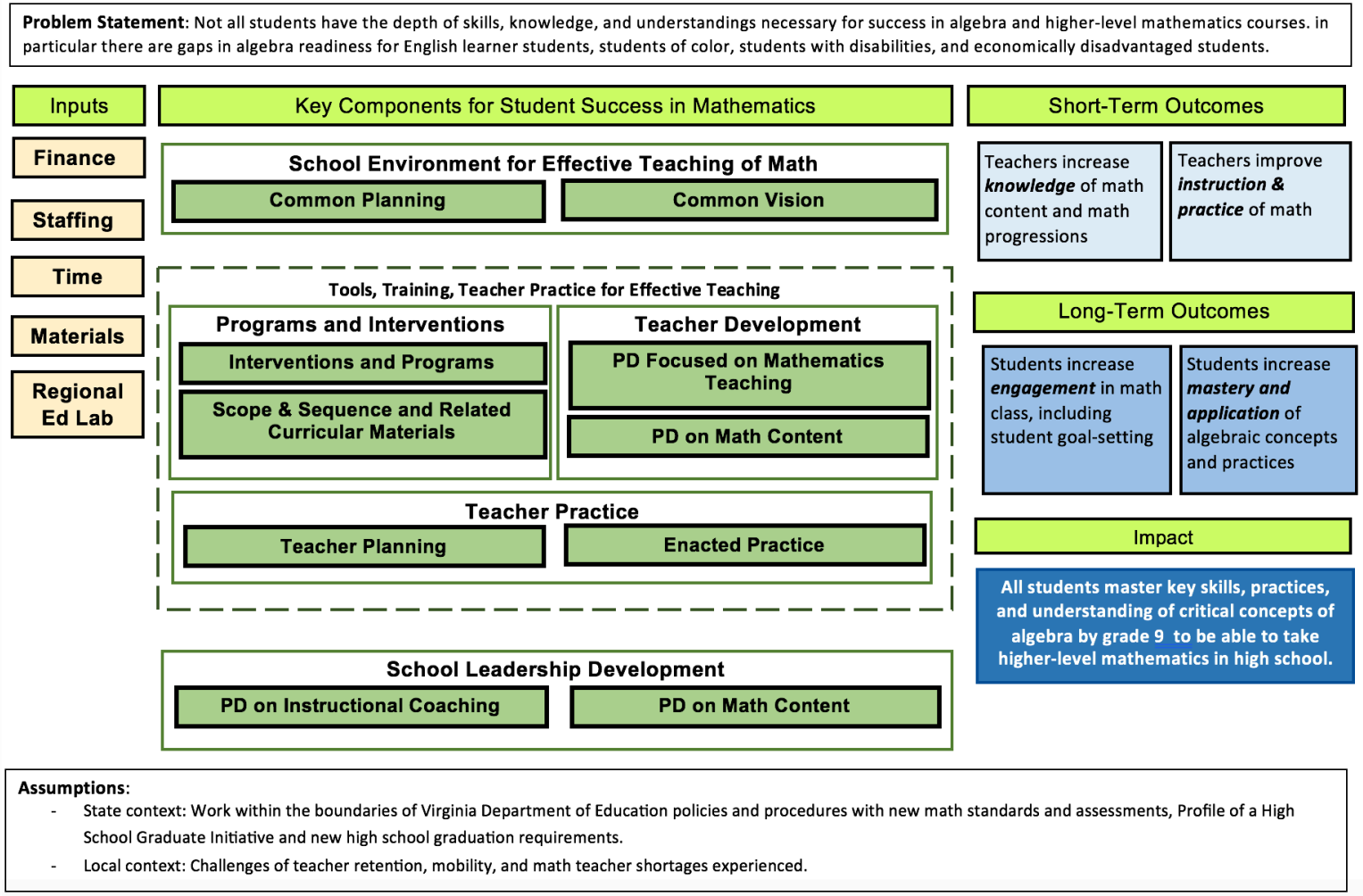
Final Research Agenda, Logic Model, and Data Catalog







Partnership Logic Model



Review the Research Agenda

- How do the topics and questions outlined in the research agenda map to the logic model?
- Which of the questions, if any, in the research agenda can be answered by submitting a reference desk question or questions?

Research agenda: Topics and questions

Topic	Subtopic	Questions
PD on math content	Online math course	Q1. To what degree does participation in the online math course increase teachers' pedagogical content knowledge in the targeted content? Q2. To what degree does participation in the online math course translate to changes in classroom practice?
	Vertical alignment of content	Q1. To what degree does teachers' learning of vertical content alignment across grades increase their pedagogical content knowledge in algebra? Q2. To what degree does teachers' learning of vertical content alignment across grades impact student algebra readiness in the middle school transition?

Review the Data Catalog

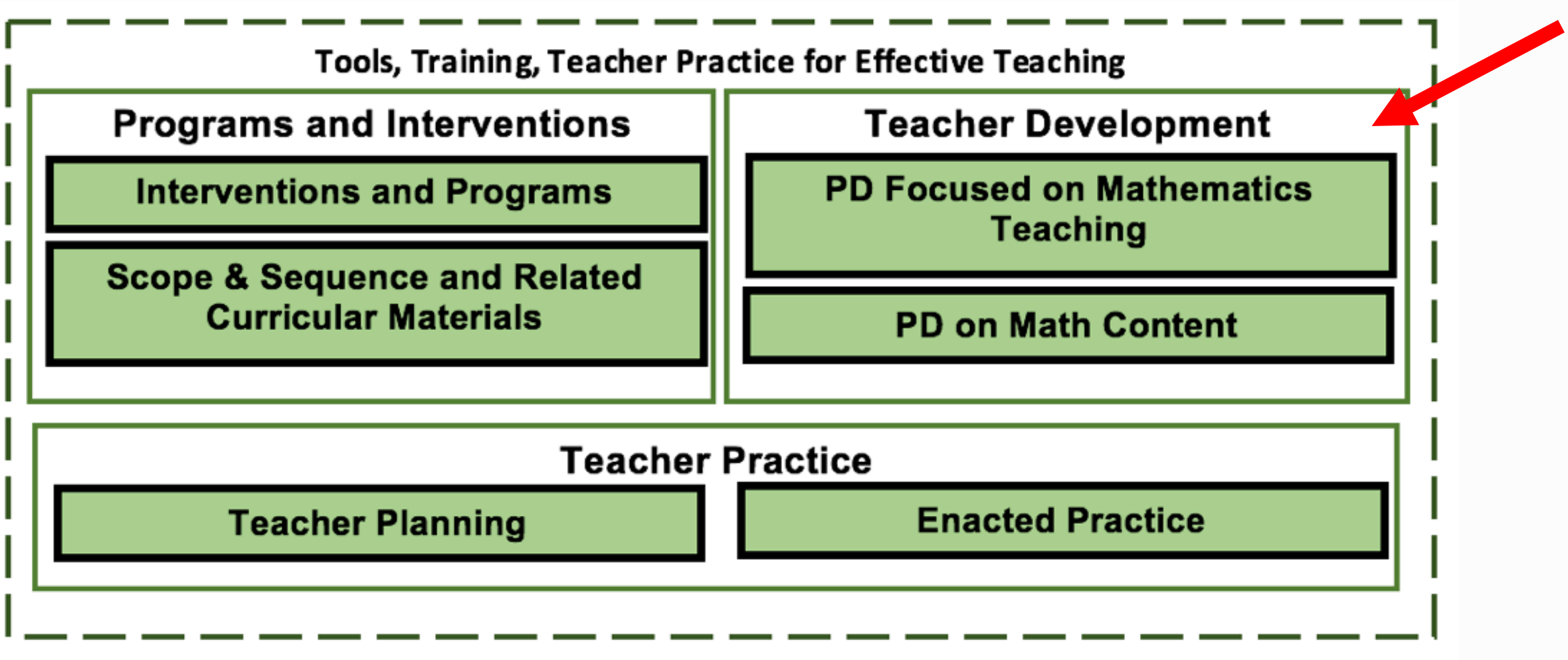
- Review the data catalog and compare it to the research agenda
- Are there existing data to answer questions in the research agenda?
- Identify where gaps exist in order to answer the questions of interest

Data catalog

Subtopic	Domain	Variables	Variable characteristics
PD on math content	Online math course	Attendance of course	Percentage attendance (range 0–100%)
		Course assessment (final grade)	Score (0–100 score)
	Vertical alignment of content	Attendance of class/ workshop	Yes = Attended class; No = Did not attend
		Course assessment (final grade)	Score (0–100 score)
		PLC attendance	Yes = Attended class; No = Did not attend
		Multigrade co-plan	Yes = Attended class; No = Did not attend

Digging Deeper/Proposal Planning: Professional Learning Models

Logic Model
Digging Deeper: Analyzing Professional Learning Models



Two Critical Components of Professional Learning

- Professional development focused on mathematics teaching (the “how” of teaching mathematics)
- Professional development focused on mathematics content and practices (the “what” of teaching mathematics)

Teacher professional development has positive associations with student achievement when it:

a) is content focused
b) incorporates active learning
c) supports collaboration, typically in job-embedded contexts
d) uses models and modeling of effective teaching practice
e) provides coaching and expert support
f) offers opportunities for feedback and reflection
g) is of sustained duration

(Darling-Hammond, Hyler, & Gardner, 2017)

Review Professional Learning Models Brief Summary

Review Handout # 5

Handout 5:

Mathematics Professional Learning Models Proposed Project: Detailed Overview

The overarching goal of the REL AP Student Success in Mathematics Partnership (SSMP) is to support educators in understanding and using the evidence base and efficacy of different instructional approaches and interventions to prepare students for success in the Algebra I course and ultimately to increase students' success in acquiring a high school diploma on time. The proposed activity has three primary components that are designed to increase leaders' capacity to provide professional learning for teachers that improves students' preparation for and success in Algebra 1 and beyond. During the project, we plan to engage partnership members in activities to:

1. **Explore professional learning models (PLMs) for mathematics learning and teaching improvement**
2. **Support understanding and use of effective instructional practices** within the defined PLM
3. **Engage in continuous improvement to test and enhance mathematics PLMs** to best meet their division's needs

Explore Professional Learning Models for Mathematics Learning and Teaching Improvement

- Uncover and understand mathematics professional learning models (PLMs) currently in use in divisions
- Support division understanding and application of common, research-based components of effective mathematics professional learning
- Provide support needed to embed research-based mathematics teaching practices in teacher learning activities
- Develop a common logic model that defines and articulates the approach, strategies, and resources available to support and improve professional learning activities

Support Understanding and Use of Effective Mathematics Practices

- Identify effective instructional practices for mathematics teaching and learning in upper elementary/middle school
- Provide resources that school divisions can use that make research-based practices and concepts concrete and appropriate for classroom use

Engage in Continuous Improvement to Test and Enhance Mathematics Professional Learning Models

- Define and collect data to support continuous improvement in ways that align to the logic model
- Analyze and reflect on data
- Provide a summary detailing findings from Year 1 PLM project

Break

PLEASE RECONVENE AT 10:45

Shaping the Proposal: Where to Begin? Unpacking Mathematics Teaching Practices

Mathematics Teaching Practices

1. Establish mathematics goals to focus learning
2. Implement tasks that promote reasoning and problem solving
3. Use and connect mathematical representations
4. Facilitate meaningful mathematical discourse
5. Pose purposeful questions
6. Build procedural fluency from conceptual understanding
7. Support productive struggle in learning mathematics
8. Elicit and use evidence of student thinking

Principles to Action (NCTM, 2014, p.10)

Read & Reflect

- Read pages **7-10 in Principles to Actions: Ensuring Mathematical Success for All** (NCTM, 2014)
- Place a "**Post-it**" next to a statement or idea that you feel has particular importance for our collective efforts to provide student success in mathematics for all students
- Be prepared to share the reasons you chose this particular idea
- Engage in pair share
- Share select ideas as a whole group

Unpacking Teaching Practices

- Choose the teaching practice of highest priority for professional learning in your school division
- Form practice-alike groups
- Review the practice in the **Principles to Action**

Goals (p.12-16)

Reasoning & problem solving (p. 17-24)

Representations (p. 24-29)

Discourse (p. 29-35)

Purposeful questions (p. 35-41)

Procedural/conceptual (p. 42-48)

Productive struggle (p. 48-52)

Using evidence (p. 53-56)

Discuss the Practice(s) in Small Groups

- Review the table defining
  What are teachers doing? What are students doing?
- Which professional learning activities in your school division are contributing to teacher competency and success in that practice area? How?
- Report out

Essential Questions to Consider

- What are the characteristics of professional learning offered in your division?
- In what ways do they evidence high quality teacher professional learning principles?
- In what ways do your professional learning opportunities connect to research-based mathematics teaching practices?
- How does teacher professional development in your division contribute to the short-term and long-term outcomes listed in the logic model?

PLM Proposal Planning: Input and Considerations

After reviewing the PLM concept paper ideas and participating in the previous activity:

- What questions do you have?
- What changes do you want to make in the current plan?
  (See Handout 6)
- What data are being collected relative to the professional learning model(s) being implemented in your school division?
  (Captured or not captured in your data catalog)

Site Visits & Meetings

Schedule Site Visits & Meetings

- Site visits: Late September/Early October
- Webinar on importance of Algebra I (October)
  - Input on date
  - Recruitment
- Quarterly meetings
  - September
  - December

Regional Educational Laboratory Appalachia
Resources & Supports Reminder

Ask-A-REL

- **Ask A REL** is a collaborative reference desk service provided by the ten regional educational laboratories (REL) that, by design, functions much in the same way as a technical reference library. It provides references, referrals, and brief responses in the form of citations on research-based education questions.
- https://ies.ed.gov/ncee/edlabs/askarel/

Example:
What do we know from research about the impact of online Algebra I courses on student achievement?

Ask-A-REL

Ask A REL Instructions

To ask an education-focused question, please complete the question submission form below:

1. Include your name and email address
2. Select your state from the drop-down menu
3. Type your question in the box
4. To receive a copy of your question, check the box "I would like to receive a copy of my question sent to my e-mail."

Note: The questions you submit are sent directly to the REL selected and not stored on this site or by the Institute of Education Sciences. To ask a question or to provide a comment about the Regional Educational Laboratory Program or the Institute of Education Sciences, select the "Contact" button at the top of this page.

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* **Full Name:**

* **Email:**

* **Confirm Email:**

* **State:** Select One

* **Question**

I would like to recieve a copy of my question sent to my email.

Submit

REL Appalachia Newsletter

- Are you receiving the newsletter?
- Who else might be interested in receiving the newsletter?

REL APPALACHIA
Regional Educational Laboratory At SRI International

September 2017 - In This Issue:

MESSAGE FROM DIRECTOR

As a resident and parent in the REL Appalachia (REL AP) region, I have the honor to serve the amazing and diverse REL AP communities throughout Kentucky, Tennessee, Virginia, and West Virginia. As the Director of REL AP, I am thrilled to be leading an incredibly talented team of researchers, technical assistance providers, and communications experts who work in partnership with equally talented leaders in school districts, state departments of education, and elsewhere to carry out and use research to improve student academic outcomes in the region.