Rivier College
July 1, 2010 – June 30, 2011

Cadre Teacher Leaders of Elem and Middle School Science (Year 3)

Project Abstract:

This third and final year the Professional Development will involve a 5-day Summer Workshop (June 26-July2) to promote Teachers Science Content Knowledge in the area of Earth Space Science with 4 follow-up sessions scheduled between September 2010 and June 2011.

Project Goal, Year 3	Work Plan for Year 3 Teachers
1. To increase elementary teachers' **Content Knowledge** [TCK], as defined by the **Grade Span Expectations** and **Assessment Targets,** within the science domains: earth space science and/or physical science	A. PD facilitators will engage teachers with inquiry-based experiences involving subject matter and phenomena within each science domain. A variety of **research-based science kits** [e.g., **STC, FOSS, GEMS, Engineering is Elementary**] will be utilized. PD Experiences will be closely aligned with the **Grade Span Expectations** and **Assessment Targets** for each science domain.
2. To improve elementary teachers' abilities to **teach core science content through inquiry learning cycle**	A. PD facilitators will, in the Summer 2010 workshop, make explicit use of the **inquiry learning cycle** (exploration, investigation and data collection, sense-making) as a core pedagogical strategy for promoting teachers' knowledge and understanding of scientific concepts/big ideas B. Y3 Teachers will use part of the Summer Workshop to **design a curriculum unit utilizing the Inquiry Learning Cycle which they will implement in their classrooms** in Fall 2010 C. In fall 2010, Y3 teachers will **document (via videotaping)** their use and implementation of these research-based instructional practices. D. PD facilitators will use the follow-up fall sessions to engage Y3 teachers in **collaborative viewing of these videotapes**. **Protocols** for collaborative viewing of classroom videotape will be selected and/or developed and used.
3. To increase teachers' knowledge of **research-based instructional strategies** and **formative assessment** (science journals, probes, classroom dialogue, science talks, science performance tasks, etc) for actively **assessing** and supporting student learning in science.	A. PD facilitators will make explicit use **science journals, probes, concept maps, science talks**, and **science performance tasks** to promote Y3 teachers' understanding of science concepts aligned with GSE of NH Science Curriculum Frameworks. **B.** PD facilitators will engage Teachers in collaborative viewing of videotapes of student learning in science taken from **www.learner.org** C. Y3 teachers will **design a curriculum unit** for use in their own classrooms which make explicit use of **science journals, probes, science performance tasks**. D. Teachers will **document (via videotaping)** their use of these research-based instructional practices.
4. To increase elementary students' **science content knowledge** as defined by **Grade Span Expectations** and **Assessment Targets** within each science domain.	A. Teachers will engage students with research-based curriculum over the academic year B. Teachers will make conscious use of the Inquiry Learning Cycle, science journals, science probes, science performance tasks C. Teachers will use **pre-and post tests** to assess and document changes in students' science content knowledge in their teaching. [MOSART] D. Teachers will **document (via videotaping)** their use of these research-based instructional practices.
5. To increase elementary students' **critical thinking skills** and their abilities to plan and conduct **scientific inquiries**	A. Teachers will engage students with Science Performance Tasks –taken from released items- B. Teachers will utilize **Science Performance Tasks** in their teaching and use data to assess changes and developments in students' inquiry skills.
6. To develop and utilize the **leadership** skills and **mentoring** knowledge of participating teachers by utilizing teacher-leaders as **Science Coaches** within their home districts.	A. Participating teachers will serve as **Science Coaches** for teachers within their home district. B. **Science Coaches** and host teacher will engage in collaborative viewing of videotape of the teaching and learning in the host teacher's classroom.