Welcome
Opening Day

- Remove food and drinks from table when we begin lab work
- Restrooms at the other end of the hall behind the lobby reception desk as well as out the door to the right, just past the security doors
Introductions
Cohort Overview

- Have done PD with Jeanne
- Have not yet done PD with Jeanne
- Prior Research
- No Research
- W WA
- E WA
- HS
- MS
- Public
- Independent
Opening Day

Purpose:
• Introduction to the SEP program and resources
• Meet your mentor

Outcomes:
• Experience several basic SEP kits as “students”
• Practice reflective journaling in advance of the summer
• Understand the program goals and expectations
• Get to know your cohort
• Make a tentative plan with your mentor
Overview of Day

- DNA Isolation Lab
- Lab Notebook/Journaling (CPR²)
- Micropipetting Lab
- Lunch
- Logistics Overview, Q and A
- Electrophoresis Exploration Lab
- Dye/Indicator Lab
- Meeting Your Mentor
SEP Background
Teacher Experience

- Professional Development & Mentored Research
- Resource Support
- Teaching Community

**Murdock ‘Partners’ program lets Juanita High teacher work for eight weeks in Center lab**

Spending the summer as a research scientist in the laboratory may not be where you would expect to see a teacher, but that is exactly where you’ll find Jeanne Chowning, a biology and biotechnology teacher at Juanita High School. Chowning is spending eight weeks at the Center in Dr. Beverly Torok-Storb’s lab as a participant in the Partners in Science program.

Partners in Science is a national program established by the Research Corporation, a Tucson-based philanthropic organization. In conjunction with other foundations, Partners in Science offers research partnerships to teachers with the goals of improving science education and increasing the number of students who choose science as a career.

In the Northwest, major funding for the program is provided by the M. J. Murdock Charitable Trust. Participating teachers receive stipends for two summers, as well as discretionary funds that can be used for educational materials in their classrooms. Teachers present their work at both regional and national meetings.

Chowning, in her second summer of the program, already has seen a dramatic impact on her teaching as well as on her
1 Professional Development & Mentored Research
2

Resource Support & Kit Loan
Teaching Professional Learning Community
Funding

- FH Support
  2.8 FTE, Space, Scientists
- Foundation
  Dean Witter Amgen
- Corporate
  Millipore Zymo/BMS
- Federal [Past]
  HHMI NIH SEPA
25+ Years
500 Teachers
70 Kits
18 Topics
12,500 Students Annually
400,000 Students Total
DNA Extraction
Lab Notebook/Journaling
Concepts, Processes, Results, Reflections

CONCEPTS

• What are the scientific concepts with which you are working and learning?
• What are the core scientific ideas?

PROCESSES

• What are the processes and protocols that you are using?
• Keep detailed daily notes about what you do in the SEP Teaching Lab or with your mentor.
Concepts, Processes, Results, Reflections

RESULTS

- Include your data (qualitative and quantitative).
- What were the outcomes of the activity/lab/experiment? What did you observe?
- Interpret your data by making claims and justifying them with evidence and reasoning.
REFLECTIONS & ATTITUDES

• Professional reflections: How is the science here similar to/different from what happens in the classroom? What connections can you make to your classroom teaching, if any? What scientific practices do you see in action?

• Personal perspective: What are your feelings and thoughts about what is happening?
Micropipetting
Lunch
Summer Overview Information
Summer Session

- Lead Teachers
- Notebooks
- SEPGuides (LibGuides Site)
- Final Projects
SEPGuides: Science Education Partnership: Home

SEPGuides is the go-to place for all SEP kit protocols and activities, as well as the posting area for announcements and program updates. If something is missing or you have an idea to contribute, please e-mail us at sep@fredhutch.org
For 25 years, SEP has offered teachers direct experience in state-of-the-art labs, support in developing engaging curricula, & access to valuable teaching tools.

Fred Hutch
@fredhutch · May 16
We’re not only a world-class research center, we’re a great place to work, according to @Forbes survey fredhutch.org/en/news/center...
Summer Overview

- Requirements – Credit and Clock Hours
- Stipends
- Parking
- Safety
- Badges
- Research Study
Research Study: Argumentation

**Summer:**
- Discuss and reflect on argumentation practices in science settings and labs

**School Year:**
- Smaller group of teachers for quarterly meetings
- Discuss autoethnographic reflections
- Partners in research process
Q and A
Meeting Your Mentor
To Discuss with Your Mentor

- Your mentor’s work (they should have an article)
- Your syllabus
- Project ideas
- Logistics (location, parking)
Cultures of Science and Education
Cultures of Science & Education

Scientists

Educators
Cultures of Science & Education

Cultures of Science & Education

**Scientists**
- More access to scientific resources
- Often specialists in field
- Immersed in culture interested in science
- Schedule from experiments
- Often communicate through skepticism/critical feedback to other scientists

**Educators**
- Access to resources limited
- Broadly knowledgeable in many subject areas
- Immersed in culture of cultivating interest
- Schedule from school
- Often communicate through encouragement and positive feedback to students

Hybrid Scientist - Educators

- Combine nurturing and criticism
- Promote mutual teaching/learning
- Possess expertise on collaboration
- Understand science education continuum
- Are communication specialists
- Cultivate evidence-based analysis
- Are boundary workers
- Are professionally recognized as scientist-educators

Electrophoresis
Exploration
Dye/Indicator Lab
THANK YOU