



March 18-20, 2011
 Poulsbo, WA

Conference Sessions

Saturday full day

9:05-5:00 (lunch 12:00 – 2:10)

Room	Grade band	Presenters	Strand	Workshop title	Description
S-1	3-8	Judy D'Amore Laura Tucker Kit Pennell	Natural World	Science in the School Yard	Learn how to use inquiry science to teach content in your own school environment. Using the strategies developed by the Exploratorium learn to engage students in asking questions that be used to initiate high level investigations. Learn to capture the evidence from all of your students work to develop deep content understanding. Participants will engage in the process using the natural environment at Poulsbo Middle School then learn how to adapt to your own environment. Please dress for inclement weather.
C-3	6-14	Amy Sprenger Amanda Bruner, Julie Masura, Elizabeth Tobin, Blakely Tsurusaki, Carrie Tzou	Natural World	What's in the Water? Puget Sound Marine Science Research for the Classroom	This presentation will focus on current Puget Sound marine science research topics and resources for bringing these topics into your educational programs. Scientists and educators working on dead zones, harmful algal blooms, plastics in the marine environment and the chemical links between urban settings and aquatic systems will present current research findings. Each of these research topics has a strong human connection and provides a real-world example of systems thinking and inquiry. Resources and examples for bringing these topics into classrooms will be provided.
D-2	9-12	Mare Sullivan Lori Stanton	Students	Teaching with your mouth shut: POGIL in physical science, biology, and chemistry	POGIL is a student-centered learning strategy which encourages students to develop critical thinking, problem solving, communication, and collaboration skills. It incorporates carefully designed guided inquiry activities focused on core concepts, with each activity based on a learning cycle of exploration, concept invention, and application. Teachers who complete this hands-on workshop will be qualified to register as classroom testers for the High School POGIL Initiative (HSPI), gaining access to biology and chemistry activities developed as part of a Toyota Foundation grant.
E-1	6-12	Jim Minstrell Eric Magi	Students	Beyond Probes: Tools for Diagnostic Formative Assessment and Instruction	This session focuses on diagnostic formative assessment that elicits students' thinking, interprets student responses to identify strengths and problematic aspects and suggests next actions designed to address problematic conceptions and support learning goals. Participants with computers and web access will have an opportunity to begin using free online tools (www.Diagnoser.com) and to learn how to use the tools effectively to address



March 18-20, 2011
 Poulsbo, WA

					misconceptions and promote deeper learning
A-4	K-12	Colleen Ponto PhD Nalani Linder	Students	Sustainable Tomorrow – A Systems Thinking Workshop	"During this interactive workshop we will explore the following topics through active games, small group exercises, and large group discussions: - What is a system?- What is systems thinking? - What are some ways to teach basic systems thinking concepts and tools to K-12 learners?- How can science teachers apply systems thinking principles to existing environmental education curricula?- What are the characteristics of learning activities that are best suited for systems thinking application? As part of the workshop, participants will use the new systems thinking guidebook, Sustainable Tomorrow, to learn the basic language, concepts and tools of systems thinking. This workshop will help science and ESE teachers better prepare students to analyze complex real world situations with multiple factors and interconnections.

**Saturday half day
 AM Session 9:05-12:00**

Room	Grade band	Presenters	Strand	Workshop title	Description
Library	K-12	Steve Robinson	Diversity	Diversity panel	"Panelists will speak on diversity issues in STEM and sustainability. Panels include: Billy Frank, Chairman, Northwest Indian Fisheries Com. Uriel Iñiguez, Director, Governor's Com. on Hispanic Affairs Frieda Takamura, Asian Community, former Commissioner/Human Rights Coordinator, WEA Brenda Johnson, African American community
P-8	4-8	Denise Dumouchel, Hillary Moore	Diversity	Population Education Integrating Science and Sustainability	We will conduct a series of participatory activities from the Population Connection curriculum, including an interactive experience with a population video, a Food for Thought activity that involves all participants in recognizing differences in resource and energy use in different regions of the world. There are also science lessons that help students to understand exponential population growth, matters of scale in time and numbers, and energy flow through natural systems. All participants receive a curriculum CD and access to regular updates on educational materials.
P-7	K-12	Mike Town	Natural world	National Recommendations	What do recent reports from the National Science Foundation (NSF), Presidents Council on Science and Technology (PCAST) and the National Academies of Science (NAS) recommend



March 18-20, 2011
 Poulsbo, WA

				and grants for STEM, Green STEM and Environmental Literacy	for STEM and Green STEM education and how will the reports impact federal legislation like the Elementary and Secondary Education Act Join us in a presentation and discussion of the recently released federal reports on increasing STEM and Green STEM education in the United States. Also hear an update of recent STEM and sustainability legislation and a report on high level sustainability conferences recently held in Washington D. C. A discussion of environmental literacy and other new federal grants will follow the presentation.
S-2	9-12	Claudia Ludwig Mari Knutson Herbert	Natural world	Ocean Systems and the Changing Carbon Cycle	Learn about 4 interdisciplinary lessons that allow students to use systems thinking and experimentation to closely model what is occurring in laboratories across the world to analyze the effect CO ₂ has on ocean chemistry, ecosystems and human societies. Students investigate nutrient cycles, algal blooms and the effects of CO ₂ on seawater pH, diatom growth and shell dissolution. During a mock summit, students present and discuss their findings and make thoughtful and researched-based recommendations for scientists, politicians, themselves and others across the world.
P-6	K-12	Patrick Ehrman B Lippitt	Professional	Strategic Professional Growth Planning	With so many professional development opportunities, how does one choose? What opportunities support my professional needs and my students' learning? This session is designed to support classroom science teachers in drafting personalized professional growth plans purposed with intentional identification and selection of professional development opportunities. Session participants will review research-based instructional practices; reflect on elements of transformative professional development; analyze current professional practices; and, draft a plan for future professional growth.
P-3	K-12	Karen Lippy	Professional	Professional Learning Communities- Working Models & Lessons Learned	Nearly a decade of collaborative team development in the Olympic region has resulted in numerous lessons and structures to support teachers working within their professional learning communities. Participants in this session will: learn about the characteristics and readily available tools to develop highly functioning collaborative groups; examine the purpose, focus, and challenges of various collaborative models; and explore ways to improve professional collaborations to optimize the collaborative inquiry process within the context of systemic school and district improvement."
P-4	K-12	Susie Richards Chris Burt	Professional	NOAA B-WET, Learn & Serve and SEA - A Network for Developing Sustainability	Participants in this workshop will come aboard SEA's 65-foot program vessel Indigo (moored near conference site) for a "hands on" learning experience - working with local watershed experts in onboard rotations focused on meaningful watershed and sustainability education, including plankton tow and observations, water quality testing, Puget Sound Awareness, art and piloting / navigation. Participants will learn about



March 18-20, 2011
 Poulsbo, WA

				Education	opportunities to engage in a no cost NOAA B-WET workshop, as well as receive no cost ongoing technical support and training in the development of service-learning focused sustainability education programs.
C-4	K-12	Elaine Wood Kara Monroe, Cinda Parton	Student	Using Performance Level Descriptors to Rate Students' Proficiency	This session will summarize the 2011 Science Measurements of Student Progress (MSPs) in grades 5 and 8 and how their performance level cut scores will be determined. In addition, hands-on training will help participants learn to use Performance Level Descriptors (PLDs) – summaries of what students can do in Advanced, Proficient, and Basic performance levels – to evaluate students' proficiency on the K-12 Science Learning Standards based on classroom work samples. All fifth- and eighth-grade teachers who participate in PLD Training will have the opportunity to contribute to setting the performance standards for the 2011 MSPs.
P-1	K-12	Gilda Wheeler	Student	K-12 Environmental & Sustainability Learning Standards: Digging Deep & Reaching Out	K-12 teachers and professional development providers - join us for this interactive workshop on the WA State K-12 Integrated Environmental & Sustainability (ESE) Learning Standards. The workshop will provide a framework for integrating ESE into your current teaching and/or your professional development (PD) work. Participants will delve into the 3 ESE standards through experiential lessons and research-based practices. Participants completing this workshop and the follow-up assignment will have the opportunity to join a cadre of ESE professional development providers.
C-2	4-12	Stamatis Vokos	Student	Understanding Energy Through Multiple Representations	The program will introduce participants to a variety of instructional strategies that promote student understanding of energy. We will analyze energy transfers and transformations through the creation, use, and modification of representations from both familiar and unfamiliar K-12 instructional materials. The use of these strategies as an effective means of formative assessment of student ideas about energy will also be discussed.
B-4	6-12	Lindsay Huettman Dan Corcoran	Student	Kamana: Naturalist Training Tools for Environmental Educators and their Students	The Kamana Naturalist Training Program is an inquiry based, experiential four-level, curriculum through which students gain a comprehensive, science and ESE standard aligned, naturalist education. You will learn tools and activities that teach local ecology and species identification, wildlife tracking, bird language, native plants, outdoor sensory awareness skills and more. If you are an environmental educator looking for unique, inspiring, hands on approach to expand you and your student's awareness of the natural world, this session is for you!
P-5	6-12	Sue Feldman	Professional	Science Coaching: Sharing What We are Learning from a Five Year Study of Science	Across the US, schools continue to adopt coaching as a form of professional development. What makes instructional coaching effective? And when it's not working, how can it be improved? In the session, presenters and participants will explore some of the practical considerations of the preliminary findings from a five year study of science coaching in



March 18-20, 2011
 Poulsbo, WA

				Coaching	elementary, middle and high schools. Participants will leave with practical ideas and tools for supporting effective science coaching and other collaborative professional development models
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**Saturday 60 minute
 AM Session 9:05-10:05**

Room	Grade Band	Presenters	Strand	Workshop title	Description
D-3	6-12	Megan McGinty	Nature	Future Ambassadors: Climate change, Youth and Leadership	Studying glaciers firsthand and interviewing research scientists in the field are compelling ways to learn about climate change. The Cascades Climate Challenge program uses these experiences to educate and inspire high-school students to undertake climate change service projects in their home communities. During this workshop we hope to share some of the foundational premises of the program- field science, affective connections, the science of climate change, service learning, and community partnerships- and their associated pros and cons.
D-1	K-12	Melissa Holecek Wenix RedElk, Mike Dedman	Students	Using Partnerships to Help Your Students Achieve Their Educational Goals	Are you interested in making your class more hands-on and inquiry based? Do you have a limited budget for classroom materials? Join us for an exciting session where you will learn the importance of using hands-on, inquiry based lessons in your classroom, and where you can access free resources for your classroom. The topics taught in this lesson are applicable to all teachers, but there will be a strong focus on resources available to teachers in southeastern Washington.
B-3	K-12	Ellen Ebert	Professional	Science Update from OSPI: Teaching and Learning Science Status Report	OSPI Science and Sustainability Education staff will provide updates on legislative actions, funding, programs, and resources to help districts and teachers implement standards and promote students' science literacy.

**Saturday 90 minute
 AM Session 9:05-10:35**

Room	Grade Band	Presenters	Strand	Workshop title	Description
C-1	9-12	Jeanne Chowning	Natural	Bioethics 101	Engage students in thinking about ethical dimensions of science using engaging and practical



March 18-20, 2011
 Poulsbo, WA

		Jodie Spitze	world		lessons developed by experienced teachers. This workshop will introduce a new 5-lesson introductory bioethics unit that helps teachers bring the discussion of controversial and challenging issues into their science classrooms. The materials highlight the concepts and approaches that our teachers have found most useful in promoting ethical analysis and place a special emphasis helping students build strong justifications for their positions.
B-2	K-12	Jeff Arrigotti	Natural world	Enabling the 21 st Century Environmental Education	Prepare your students for the future: 21st Century science education requires 21st Century science methods and tools. PASCO's Environmental workshop is designed to empower teachers to deliver authentic 21st Century science experiences using standards-based content and innovative electronic measurement systems.
B-1	6-8	Deb North Dave Neese	Natural world	N2: The Layered Curriculum Developed Model for Project-based STEM Education	"During this session, participants will experience: <ul style="list-style-type: none"> •The value of project-based learning •A proven approach to interdisciplinary, standards-based unit design resulting in rich units focused on sustainability and systems thinking •How technology can aid the development of inquiry skills •Standards-based assessment tools •How to embed inquiry-based science concepts into projects •A typical STEM project from inception to the final exhibition"
P-2	4-12	Sherry Schaaf Kristin White	Student	Uncovering Student Thinking Using Formative Assessments - What Are They Thinking?	The use of formative assessments help teachers identify the variety of ideas students bring to their science learning can assist teachers in designing instruction to address misconceptions. Balanced with summative assessments, formative assessments given before, throughout and at the end of an instructional period of time can help a teacher purposefully guide and inform their own instruction to best serve their students. The use of instructional probes, such as those developed by Page Keeley, will be emphasized in this presentation as participants learn how they can identify and address student misconceptions. Analysis of probes themselves, how they were developed and the curricular and instructional considerations behind them will engage participants. Efficient and effective ways to analyze student work to help inform instruction will also be shown as participants look at actual student work.
A-1	K-12	Karen Tennyson	Diversity	Nothing Comic About It: Taking Graphic Readers Seriously in Your Science Classroom or Holy Thought	Are you using Graphic Readers in your science classroom? Would you like to? Come learn the ins and outs of graphic readers and how to use them in your classroom. Gain ideas for how to use these powerful tools to engage your diverse student populations in science. Turn the enthusiasm of your students for graphica into real learning experiences that will get your kids to venture further into science. There will be many samples from four different publishers for you to take home and use immediately. Plus, hands-on activities to keep you fully engaged throughout the session.



March 18-20, 2011
 Poulsbo, WA

				Balloons, Batman!! We're doin' science!!	
A-2	K-8	Stephanie Solofra	Students	What's New with FOSS?	Participate in an engaging inquiry lesson from the new FOSS Matter and Energy Module as you also learn of the new research based components in FOSS. You will experience and walk away with a set of all the new Folio Components , the FOSS Alignment to the State Standards, and a sample of the new Benchmark Assessments.
D-4	4-8	Michelle Brown	Student	Developing Deeper Science Learning through Outdoor Inquiry Experiences	Woodland Park Zoo's Ready, Set, Discover program started as an effort to get students outside exploring local parks and discovering that there are interesting local plants and animals. After the first year, we saw an opportunity to deepen the experiences by focusing on scientific inquiry. With repeat visits over two years, zoo staff work with 4th and 5th grade students to understand ecosystems, make observations, ask testable questions and practice scientific inquiry while having fun outdoors. During this presentation, we will share our current program and how it has evolved.

**Saturday 90 Minute
 AM Session 10:15-11:45**

Room	Grade Band	Presenters	Strand	Workshop title	Description
D-3	K-12	Craig Gabler Mike Brown, Georgia Boatman, Jeff Ryan, Adrienne Somara	Student	Focusing on Instruction- An Introduction to the Elements of Effective Science Instruction	Join the 9 Regional Science Coordinators as we explore the Elements of Effective Science Instruction (EESI). EESI was created by the coordinators as a synthesis of research on characteristics of effective science instruction. We will engage with the four elements identified in EESI and how they can improve the teaching and learning of science.
A-3	3-8	John Gallagher, WSTA Regional Reps.	Student	Addressing Student Misconceptions of the Earth –Sun – Moon system	Students can easily memorize that seasons are caused by the tilt of Earth but do they really understand this? Or if asked why it is hotter in summer do they say because Earth is closer to the Sun? This WSTA and NASA Space Grant Consortium workshop will deepen content knowledge and provide constructivist techniques to help students truly understand the Earth-Sun-Moon system.



March 18-20, 2011
 Poulsbo, WA

B-3	4-12	Joanne Lind Mariann Cook Andrews, Jennifer Howell	Student	Hazards on the Home front	"Hazards on the Home front (HHF): A Teacher's Guide to Household Hazardous Waste is nine lessons and related investigations on hazardous household products. HHF informs students about potential hazards and emphasizes that they can take steps to minimize adverse effects to their health and the environment. The session will provide an overview of the curriculum, with demonstration of two lessons. Attendees will receive a CD with the complete updated curriculum for grade 4-12.
D-1	K-5	Stewart Anderson	Students	Help Me Understand the New Standards, Big Ideas, and How the MSP has Changed	This session is specifically designed for elementary classroom teachers that want to help their students gain the knowledge and skills to prepare them for the MSP by the time they reach fifth grade. You will have a better understanding of the New Standards and see the specific changes that have been made on the Grade 5 MSP. See how you can use classroom-proven strategies and methods to improve science literacy for all of your students.

**Saturday 60 Minute
 AM Session 10:45-11:45**

Room	Grade Band	Presenters	Strand	Workshop title	Description
B-2	K-8	Rick Reynolds	Students	Meet Standards across the Curriculum—and Have Fun!—with the EverGreen Twins	Engage students with The EverGreen Twins Activity Book: 40+ Eco-Activities, Games, and Outdoor Adventures. Designed for elementary and middle school students with plenty of funny cartoons and other visuals, the book integrates ecology and sustainability with other key learning standards in science, math, language arts, social studies, art and technology. It includes puzzles, hands-on projects, outdoor investigations, and illustrations designed for coloring. This will be an active session and include free sample activities and a drawing for free books and colored EcoPencils at the end.
B-1	K-12	Erika Holmes Ginger Wireman	Natural World	Connecting to Hanford: Science, Technology, Policy and the Environment.	Educational outreach specialists Erika Holmes and Ginger Wireman of the Washington State Department of Ecology's Nuclear Waste Program will present several avenues for teachers to link lessons about Hanford to learning goals. Due to the enormity of this project and its impacts on the northwest and beyond, Hanford-related lessons are interdisciplinary, including aspects of history, multiple branches of science, technology, government policy, civic responsibility, ethics, critical thinking and problem solving, and technical writing and editing.
A-2	6-12	Tara Richerson	Students	Using Cell Phones for Research and	Text messaging is widely used by students and adults for communication purposes. However, cell phones can also be used to conduct Google searches, collect poll data for research and assessment,



March 18-20, 2011
 Poulsbo, WA

				Data Collection	and capture information. Learn how to harness this power found in your pocket and discuss policy concerns for your district.
C-1	6-8	Jessica Levine Emilie Mosko, Sara Hoofnagel	Students	Creating a Sustainable Context for Science Content	Sustainability is a framework for effective teaching and learning. Come connect science content to real-world context. Inspire students with rigorous and relevant experiences. See a scope and sequence woven with a deliberate sustainable context into an established, district-adopted science curriculum. The session showcases a scope and sequence woven with a deliberate sustainable context into an established, district-adopted science curriculum. See a successful science learning community where students and teachers make meaningful connections. Inspire students with rigorous and relevant experiences. Teachers will learn of resources from community partners to strengthen the curriculum.
A-1	4-8	Janet Charnley	Natural world	The Never-ending Salmon Tale, an Interdisciplinary Placed-Based Curriculum.	Students learn about their local watershed and the life of the Pacific salmon as they write a fictional choose your own adventure story about salmon that travel down a nearby stream. Each chapter focuses on one stage of the life cycle of the salmon. Descriptions of local places, current issues, and historical and natural settings must be accurate. The interdisciplinary project involves students in activities in social studies, science, art, and technology and language arts.

Saturday half day
PM Session 2:10 – 5:00

Room	Grade Band	Presenters	Strand	Workshop title	
P-1	All	Ilsa Govan Robert Marino	Diversity	Climate Change as a Social Justice Issue	This workshop will examine how climate change exacerbates nearly all inequality, more severely impacting communities of color, poor people, and women. We will examine problems including asthma, air pollutants, disproportionality in transportation, land use and gentrification; and greater violence against women in the after math of natural disasters. We will look at equitable local, regional, national and international solutions proposed by marginalized communities. Through interactive exercises, participants will explore how to engage students on environmental and climate justice issues already taking place in their lives.
P-2	4-12	Chuck Lennox, Ray Li	Diversity	Green Buildings, Diversity and Sustainability - The Story of High Point Center	High Point Center, in West Seattle, is a sustainably designed building developed by Neighborhood House (a 104-year old social service agency) to serve their diverse clientele – 80% of whom are immigrants and refugees speaking 19 languages. Why would a social service agency make a connection to sustainability? Find out about this unique connection and learn how education has been used to tell the story of the center to diverse audiences including their clients.
P-6	K-12	Pat Ehrman	Professional	Advocate for Issues	Has progress on a professional issue that matters to you become stalled?



March 18-20, 2011
 Poulsbo, WA

		B Lippitt		That Matter To You	This session is designed to support classroom teachers in becoming advocates for professional issues that they believe will support their professional practice. Session participants will be introduced to an advocacy framework and tools; identify a personal professional advocacy issue; consider language necessary for framing the issue; and draft an advocacy plan for the issue."
P-8	K-12	Meredith Lohr Kim Armstrong, Becca Meredith	Student	Washington Green Schools: Engaging Students in Investigation and Service	In its second year serving schools throughout Washington, Washington Green Schools is a web-based program that engages students in hands-on investigations of resource use on campus. Students apply essential skills to explore topics such as energy efficiency and solid waste, and their findings lead them to actions that make a difference. In this session you'll learn how to implement WAGS in your school, support local schools in their efforts, and join the network of green schools certifying throughout the state.
D-4	4-8	Mark Watrin Carol Miles	Student	You Don't Know Beans about Beans	What do students learn from growing beans in milk cartons? We will explore the full potential of using beans focusing on fun and friendly ways to teach the big idea of biological evolution (LS3) as well as ecological, social and economic systems (ESE1).
P-7	K-8	Eliana Medina, Carolyn Murphy, Robin Hart, & Carlie Jonas	Professional	Teachers, Researchers & a Nobel Laureate: Learning How to Teach Sustainability in K-8 Classrooms	Lee Hartwell's Sustainability Workshop for K-8 teachers, conducted at the Fred Hutchinson Cancer Research Center, will be described from the facilitators' perspective, and the point of view of the workshop teachers. The teachers will not only present their workshop experiences, but also how they integrated what they learned into core subject matter lessons, using sustainability as a lens rather than "one more thing to teach." The session will include their processes of instructional design, implementation, student responses, unexpected outcomes, and implications and recommendations for continued professional development.
P-5	6-12	George Nelson, E. Smith, J. Clark, K. White, L. Guilmur Dillman, P. Duranceau, S. Nunamaker, S. Schaaf, V. Horton,	Professional	Learning from Success: Science Coaches Experiences Improving Science Instruction	Participants will engage with best assessment-for-learning practices and gain access to resources and tools to start trying (or improving the use of) them in their classrooms. The session will be led by the state funded science coaches who have worked during the past three years to improve middle and high school teachers' science instruction with a focus on assessment. They will address three main questions: Where are we going?, Where are students now?, and How do we close the gap between the two?



March 18-20, 2011
 Poulsbo, WA

**Saturday 90 minute
 PM Session 2:10 - 3:40**

Room	Grade Band	Presenters	Strand	Workshop title	Description
C-2	9-12	Jeanne Chowning Jodie Spitz	Natural world	Integrating Bioinformatics into Introductory Biology Courses	This session explores how to integrate basic bioinformatics concepts and tools into introductory biology classrooms through a new curriculum entitled Using Bioinformatics: Genetic Testing. The lessons explore how bioinformatics is applied to genetic testing using engaging activities and computer-based exploration. Specifically, the bioinformatics tools BLAST (which helps align sequences) and Cn3D (which aids in the visualization of molecules) are used to investigate the genetic and molecular consequences of a mutation to the BRCA1 (breast cancer susceptibility) gene. Students are also introduced to principles-based bioethics in order to support their thoughtful consideration of the many social and ethical implications of genetic testing. The curriculum will be distributed to participants on CD free of charge.
S-2	9-12	Eric Muhs Claudia Ludwig	Natural World	Teaching the Process of Developing and Optimizing	In this curriculum module, students in physics, integrated science, and biotechnology courses are confronted with the same challenges scientists and engineers are when the technology they need to answer questions is not available. Students use inquiry to investigate seven driving questions such as, How do scientists measure what they cannot directly observe with their senses?, What are the trade-offs and benefits to amplifying a signal? How can we make inferences from microbe populations to develop a water management plan?
C-4	K-12	Elaine Wood Kara Monroe, Cinda Parton	Students	Upcoming State Assessments in Science	This session will provide an overview of the 2011 Science High School Proficiency Exam (HSPE) as well as the current status of development for the 2012 biology end-of-course (EOC) exam, which will be the first high school assessment on the 2009 K-12 Science Learning Standards. In addition, an update will be given regarding the first state assessments of the K-12 Science Learning Standards in grades 5 and 8 on the 2011 Measurements of Student Progress (MSP).
B-3	6-8	Burke Anderson V. Horton	Students	Learning Science by Drawing	Learn to use drawing activities as formative assessments and as tools for developing science concepts. In this hands-on workshop teacher participants will experience a variety of drawing activities that support middle school earth science standards. All grade level science teachers are welcome.
D-1	K-12	Travis Dutton Stephanie Leisle, Ryan	Student	Creating Sustainable Communities	Join Pierce County's environmental educators and share in the experience of creating a curriculum that strengthens community partnerships, addresses state standards, and provides students with the tools and information needed to actively improve their local and global



March 18-20, 2011
 Poulsbo, WA

		Misley, Mary Coleman		through K-12 Integrated Environmental Education	environments. We will share our successes and challenges followed by a small group dialog, allowing workshop attendees to share experiences and resources to help us all walk away with a stronger framework for teaching environmental education.
P-3	3-8	Lynda Paznokas	Students	Using Poetry to Teach about Environments and other	Poetry can be the vehicle for helping students understand and remember science concepts. When language is used differently, students often retain concepts longer and more deeply. Templates for various types of poetry will be provided: shape poems, diamantes, cinquains, haiku, tankas, couplets/quatrains, limericks, free verse, and more. Ideas for displaying and presenting poetry in a science classroom will be presented (such as through simple bookbinding and choral readings), along with related children's literature and art.
B-2	4-12	Cathie Vincent Jenn Whitsett	Student	"Plankton In The Classroom: A hands-on Inquiry- based approach"	Every second breath you take comes from plankton. Not only are plankton important for our survival but they are also are cool, easy to collect and fun to play with in the classroom. Discover why they are important and the implications of Global Climate Change. Learn how to build a plankton net, how to collect samples, test water turbidity and investigate how ocean acidification impacts life on the microscopic level.

**Saturday 60 minute
 PM Session 2:10-3:10**

Room	Grade Band	Presenters	Strand	Workshop title	Description
B-1	K-12 Adults	Denise Dumouchel Hillary Moore	Professionally	Connecting across the Pacific: Educators Collaborating in Taiwan, Hong Kong, and Singapore	IslandWood has begun working with educators (and youth!) in Taiwan, Hong Kong, and Singapore. After a month in Taiwan and a week in Singapore during 2010, we have gained numerous insights into working across an ocean, and across cultures, for environmental and sustainability education. Come see images and hear stories of our adventures!
C-1	K-12	Traci Price	Natural World	The Oregon Environmental Literacy Plan:	In 2009, Oregon passed the No Oregon Child Left Inside Act to develop the Oregon Environmental Literacy Plan: Toward a Sustainable Future. This plan, completed in October 2010, will provide Oregon K-12 students with a continuum of place-based learning



March 18-20, 2011
 Poulsbo, WA

				Toward a Sustainable Future	opportunities and ensure that they graduate as critical thinkers, ecological problem solvers and engaged citizens. Workshop attendees will be introduced to Oregon's Plan, consider its regional implications, and discuss support through the pending federal No Child Left Inside Act.
D-3	9-12 Adult	Miriam Bertram Tim Stetter	Students	Bringing Climate Science into the High School: a NASA/UW/HS Partnership	In this session we will introduce the UW curriculum and new hands-on tools developed from NASA data, incorporated in a new dual credit climate science course to be offered through the UW in the High School program. We discuss how our approach brings researchers and educators together to form a new community strongly linked by an opportunity to engage high school students in creating solutions to the new social and scientific challenge of climate change.
A-3	6-12	Nisa Karimi Peter Donaldson	Students	Stormwater - System Thinking Field Experience	A new instructional unit that integrates place-based learning, systems thinking, applied research and civic engagement in grades 6-12. Based on constructing a demonstration stormwater facility on school campus or in the community, this unit includes a unique online pre and post assessment through which students analyze the aggregated data of their own knowledge to generate needed research and stewardship actions to solve stormwater runoff pollution. The unit is aligned with all three standards for environmental and sustainability education.
A-1	Adult	Don Burgess, PhD	Natural world	Listening to children: Perceptions of nature and Biophilia at Mountain School	Biophilia provides a critical framework to assess the themes and impacts of an environmental education program. The intent of this exploratory study is to investigate children's perceptions and experiences of nature during a residential outdoor environmental education program. The study intends to contribute to an understanding of how nature experiences arouse biophilia (love of life and living things). Using qualitative interviews, naturalistic observation and artifact collection, I studied children's responses to nature during and following their participation in a residential environmental education program known as Mountain Explorations.



March 18-20, 2011
 Poulsbo, WA

**Saturday 90 minute
 PM Session 3:30 – 5:00**

Room	Grade Band	Main contact	Strand	Workshop title	Description
B-1	9-12	Linda Cabe Smith	Students	A High School Teacher's Guide to "Science Notebooking"	Student notebooks are not working for me. Explore ways to use notebooks for reading, writing, and inquiry in High School Science classes. Determine your goals, check out types of notebooks and discuss the dreaded "notebook grading". If possible participants should bring a sample of their students' work to share.
A-3	6-12	Peter Donaldson	Students	The Watershed Address Community Curriculum	A new framework for place-based, systems thinking, applied research and civic engagement in grades 6-12, the Watershed Address Community Curriculum uses the data-driven performance measures and annual sustainability reports of local government and non-profit partners as a "living textbook," applying rigorous academic excellence to the relevancy of solving problems in our own community. The Community Curriculum is a breakthrough strategy for 21st century learning aligned with all three standards for environmental and sustainability education.
A-2	K-12	Pat Otto	Students	The Urban Forest Project: Students Restoring Seattle	Come hear about Green Seattle Partnership's innovated program engaging students in the evaluation and restoration of their local urban forests. A visually rich PowerPoint gives students a context for the problems facing Seattle's urban forests and their part in restoring those forests. Using the design process, high school students evaluate urban forests and determine restoration strategies for their site. Middle school students learn about and remove invasive plants and elementary students learn about and establish native plants at the site.
C-1	4-10	Brian Hawkins	Students	Erupting Volcanoes: Using Space Based Observations to Make Down to Earth Science Decisions!	Participants will use earth science lessons from the NASA Mission Geography on line curriculum. Actual images and data from space and space based satellites will be compared to understand effects of volcanic eruptions. Participants will analyze actual data to help graph, evaluate and predict human impacts of catastrophic volcanic events.

**Saturday 60 minute
 PM Session – 3:50-4:50**

Room	Grade Band	Presenters	Strand	Workshop title	Description
B-3	Adults	Tanya Anderson	Professionally	Natural History –	North Cascades Institute's graduate residency program in environmental education, offered in



March 18-20, 2011
 Poulsbo, WA

				The Heart of a Field-based Graduate Residency program	partnership with Western Washington University, immerses students in the natural history of the North Cascades. This year the Institute is taking its focus on natural history one step further by offering a North Cascades Naturalist Certification. NCI staff will present successful strategies for engaging adult learners in natural history and science.
D-3	K-12	Phillip Lee June Jo Lee	Diverse Populations	Connecting Good Eats and Good Reads to Reach across Culture to Build Food Literacy	How does culture play a role in what and how we eat? How has hunger shape our history and scientific development? How has immigration affected our diet and farming system? Students can learn about culture, history, and sustainability by understanding our food systems. READERS to EATERS, a leader in promoting food literacy, will share recent books on these issues and ways to use them in your classroom or school garden.
C-2	6-14	Tammie Schrader, Heather McKean	Students	Teaching Genetics with Inquiry	This presentation shows a research project in progress on using Inquiry to teach Genetics. Using Inquiry and assessment to drive instruction on Mendelian Genetics, this presentation will not only show an inquiry based lesson but also connect with literacy.
S-2	6-20	Kim Hanson Eva Foster	Diverse Populations	Native Youth Engaging in Interdisciplinary and Relevant Science	Using the Elwha Science Education Project--a culturally-integrated academic enrichment program for Klallam youth--as a case study, we'll explore useful theories and practices in merging traditional knowledge with environmental science education to support STEM education. We'll share what we've learned working with Native youth and their communities. This presentation will also address inquiry-based field studies, show students' use of digital storytelling, introduce online curriculum resources, and review the curriculum resource, "Research Summaries from the Elwha Ecosystem Restoration Project".
C-4	K-12	Sharon Abreu	Diversity	Music as a Fun and Effective Tool for EE/ESD	Singer-songwriter-environmental educator Sharon Abreu of Irthingz Arts-Based Environmental Education will lead a fun and energizing workshop about the power of music for EE/ESD. She will share environmental songs and vocal technique tips to help participants gain confidence using their voices and incorporating music into their classes. Participants will be encouraged to share songs as well. Some songs are in Spanish. Some need no musical accompaniment. Sharon will share songs about water, climate change, energy, and biodiversity, as she has at the United Nations and the World Summit on Sustainable Development.



March 18-20, 2011
 Poulsbo, WA

Sunday 60 minute
8:45-9:45

Room	Grade Band	Presenters	Strand	Workshop title	Description
C-3	6-12	John Gallagher, L.Duncan-Taylor, L. Gerardi, J. Henry, D. Johnson	Students	Visions of the Universe: Hands-On Astronomy for Your Entire Community	Listen to a Native American legend of How the Stars Came to Be and a modern story explaining how we are Older Than the Stars. Learn how we know what stars are made of and create a bubble map of the universe. Take these ideas back to your own community and share our human Visions of the Universe.
S-2	K-5	Pat Kirschbaum Jo Meints; D. Thomas, K. SanFellipo,	Professionally	Kitsap Science Connections Science Kit: Learning About Our Local Environment and Resources	This partnership between agencies in Kitsap County and the Central Kitsap School District resulted in the development of a locally-based 4th-grade science kit. The lessons align with Washington State K-12 Science Standards and the kits are currently being piloted in all 12 elementary schools in the district. Participants will learn about the development of the project as well as have an opportunity to complete several of the activities included in the kit.
D-4	K-12	Gilda Wheeler Abby Ruskey	Natural World	No Child Left Inside: State Environmental Literacy Plan	The No Child Left Inside (NCLI) act require states, as a prerequisite to receiving implementation grants, to develop environmental literacy plans (ELPs). If passed, Washington's schools, teachers, and community partners will be positioned to receive up to \$1.5 million in funding annually. In anticipation of passage of the legislation, OSPI and EEAW are leading the development of Washington State's ELP. Join us in this session for an update on progress of the federal legislation and to provide feedback on Washington's ELP.
D-3	6-12	Rolf Tremblay	Natural World	Getting to the Core of Climate Change	Learn how to use data from the polar regions to teach students about climate change, past and present. Use ice core data from Antarctica to graph the relationship between carbon dioxide levels and temperature over the past 400,000 years. Explore recent trends in global temperature and CO2. Examine dramatic changes in polar ice that have taken place over the last decade.
P-7	K-12	Rob Holmes	Nature	Green Living Project: Students Connecting to Global Sustainability	Green Living Project's popular curriculum, "Students Connecting to Global Sustainability," uses multimedia and technology to bring cutting-edge global sustainability stories into the classroom. Green Living Project has documented over 50 compelling sustainability stories from 17 countries in South America, Central America, East Africa, South Africa and North America. Learn about our free educational opportunities and how your students can connect to global sustainability issues and solutions through our curriculum, school presentations and other interactive opportunities.



March 18-20, 2011
 Poulsbo, WA

P-8	6-12	Kim Hanson Eva Foster	Diverse Populations	Elwha River Dam Removal and Restoration Curriculum	Did you miss the field trip? The Elwha River Restoration Project, largest dam removal in the country, is in our backyard! Learn about opportunities for using the Elwha as a scientific, environmental and cultural case study in the classroom. Review online curriculum resources for teaching about this historic event, including research summaries, time-lapse animations, digital stories, and student inquiry field research projects.
B-3	K-14	Donna Chang	Professionally	A Watershed of Possibility: Service Learning and the Environment	Service Learning is an instructional strategy that lends itself easily to environmental studies. Learn how one school uses service learning to increase student engagement among a highly diverse, high poverty student population. Find out what community partnerships can mean to you as a life long learner and to your students as they make meaning of their school 9experiences.
B-4		Dave Wilton	Students	Buy,Use, Toss?	Examining the Things We Buy through an Exploration & Redesign of the Materials Economy " Ye "Connecting to the Natural World: Science, Technology, Policy and the Environment" "The global materials economy doesn't end at our front doors - it quietly continues to landfills, incinerators, and recyclers. Knowing the story behind the things we buy, use, and toss can help us to consume in ways that improve our lives and the lives of others. In this participatory session, take part in lessons from a free curriculum unit that can be used in conjunction with the movie ""Story of Stuff"" to explore the life cycle of products and the multifaceted system that makes up global production and consumption."
Tech	K-12	Lois Sherwood	Professionally	Implementation Grant	Districts that send 3 or more teachers are eligible for up to \$5000 to implement findings of this conference during the 2011-2012 school year. Come to review model proposals and learn how to apply.
P-5	8-12	Ryan Johnson	Natural World	From Screens to Streams: Using Technology and Service Learning to Cultivate Student Stewardship	Freshwater ecosystems are steadily degrading. 35% of rivers and streams in the U.S. fail to fully support aquatic life. Meanwhile, our youth are increasingly disconnected from the natural world, spending most of their time indoors and "plugged in" to a variety of electronic media. To meet these challenges head-on, The Freshwater Trust is developing StreamWebs™, a web-based platform designed to get students outside and engaged in authentic, locally-based freshwater research and restoration projects.



March 18-20, 2011
 Poulsbo, WA

**Sunday 90 Minute
 AM Session 8:20-9:50**

Room	Grade Band	Presenters	Strand	Workshop title	Description
A-3	K-12	Stephen Coleman	Nature	So Ya' Wanna Take the Kids to the Field and Retain Your Job?	Have you ever wondered how to develop a personalized and local outdoor, environmental, sustainable program to meet the needs of students? Do you want some tips with planning, preparation, site selection and safety considerations when taking to the field? Even if you are short on budget but have plenty of motivation and energy, this is the place for you! The presenter has over 30,000 student hours in the field with no serious injuries! Application of the key concepts from this presentation will better enable educational practitioners to recognize, create and use local outdoor areas for high yield cross-curricular instruction.
A-2	K-12	Tara Richerson	Students	STEM + Educational Technology: Integration and Assessment	These state-level assessments for educational technology are the first of their kind in the United States and represent a unique opportunity for science teachers to model a truly integrated STEM and project-based approach for all grade levels. During the workshop, participants will explore the components of Washington's Educational Technology Assessments, including prompts, sample session plans, scoring tool, and resources. After a general overview, participants will have an opportunity for small group discussion and input about specific assessments. At the end of the session, the timeline for final versions of the assessments, exemplars, professional development, and other elements will be shared.
A-1	4-12	Nikken Palesch	Students	The Age of Inquiring: New Tools and Tips of the Trade for the Inquiring Mind	Struggling with inquiry based learning in your classroom? Not enough time, content knowledge, or confidence in students guiding their own research questions? This workshop will deliver practical approaches for integrating IBL into science and interdisciplinary curricula. We'll introduce inquiry-based learning as an accessible method to facilitate hands-on science experiences that promote students' efforts to create interesting, relevant, and technically feasible research projects. Participants will leave this workshop with several IBL activities that are transferable to a variety of learning environments.
A-4	K-12	Vanessa Hunt	Students	More than just a day out: A research based approach to maximizing the educational benefits of environmental	What makes an environmental field trip really 'work' in terms of maximizing student content and process learning, and in promoting increased interest in basic science courses? This session reviews and summarizes the research literature on field trips, and we present a case study of high school students' reactions to a structured day in the field. Attendees will participate in an interactive exercise relating to environmental field trip design and planning.



March 18-20, 2011
 Poulsbo, WA

				field trips	
Library	K-12	Steve Robinson	Diversity	Panelists will address diversity issues in STEM and sustainability.	Washington State is at a crossroads. We can address our achievement gap issue and become a leader in this nation economically and socially or we can fail miserably and lose any economic vitality we may currently have. This session will highlight strategies that can work in Washington State by helping underrepresented minorities attend college. Panels include Steve Robinson, Native American Community; President-Elect, EEAWSSTA; Ricardo Sanchez, Hispanic Community, Seamar, via Commission on Hispanic Affairs and Sally Brownfield, Education Coordinator, Squaxin Island Tribe and a representative from the Muslim and Pacific Island communities
C-1	8-12	Diana Fisher	Students	Teaching Students to Build Models to Study Sustainability Issues	Building models of non-renewable and renewable resource systems, and of co-dependent populations is available to a broad audience of middle and high school students. From the models students can identify the feedback interactions at work and try to determine leverage points in the system. Students can then test policies to try to manage these systems. Only knowledge of elementary algebra is needed. The presenter has done this work with high school students for 20 years.
C-4	Adult K-12	Karen Matsumoto Janice Mathisen	Professionally	Integrating Equity and Science Learning: Strategies for Informal Science	Seattle Aquarium education programs will be examined through a “race and social justice lens”, to illuminate issues of inclusion and service equity. We will discuss our continuing effort to integrate environmental justice into programs, and show how an existing race and social justice “toolkit” can be used to examine formal and informal programs and curricula. We will discuss a variety of strategies for actively promoting equity in science educational programs, and will provide multiple opportunities for discussion.
D-1	K-8	Kate Bedient Linda Versage	Students	Enhancing Science Units: Helping Students Make real World Connections	Don't have time for environmental and sustainable education? Overwhelmed by the pressures of completing required curriculum? In this session, participants will explore the possibilities of incorporating real world learning and environmental science concepts into existing classroom curricula. Look for natural links in science units, assess your school's resources and learn tips for making learning exciting and successful for students. Homewaters has supported Seattle teachers in this work for many years. Find out how to do it on your own.
S-1	K-5	Susan Milan	Natural World	Trail Guide Project Using Your 'Place' for Integrated Learning	To begin we will look at examples of trail guides created by K/1 students for their local forest ecosystem on Whidbey Island, integrating science, literacy, technology, service, and sustainability. We will then get outside and go through the initial steps in creating a trail guide, using the conference site. Please dress for the weather! We'll save some time to discuss ways to apply this idea in your own place, including barriers and how to work with them.



March 18-20, 2011
 Poulsbo, WA

D-2	K-5	John Hail Theresa Koehler	Students	Increasing Energy Efficiency Awareness of the K-12	Practicing energy engineers and scientists will train teachers to use energy efficiency awareness lesson plans and kits for K-8 grades. The content is from public sources and Battelle-developed concepts that support state science and sustainability standards. The target audiences are non-science teachers who want to incorporate consumer-type awareness of energy science and of best practices for energy efficiency at home and school.
B-1	All	Martha Kurtz	Professionally	TOTOS Regional Meeting	The Teachers of Teachers of Science (TOTOS) organization will meet to discuss plans for upcoming events and share program news. TOTOS consists of Washington's university faculty members responsible for teaching future K-12 science teachers both in pedagogy and in science content. All are welcome to join us for our discussion.
B-2	6-8	Vicki Horton	Students	Questioning Strategies for the Science Classroom	Powerful classroom questioning strategies increase student engagement and elicit deeper-level thinking in students. Workshop participants will explore a variety of adaptable classroom questioning strategies proven to enhance student learning. The content focus is the 'Flow of Energy through Ecosystems' from the Washington State's life Science Standards for middle school. This session is applicable to all educators.