

**Teaching Science as Inquiry: Our Project In Hawaii's Intertidal (TSI: OPIHI)  
Detailed Agenda (\*Subject to change)**

**Pre-PD Tasks**

1. Complete pre-PD surveys

**January 13<sup>th</sup>, 2016 (Online: 5–7:30 pm) Introduction & Watersheds**

<b>Time (pm)</b>	<b>Activity</b>
4:45–5:00	Participants sign in, Q & A, sound/technology “checks”
5:00–5:20	Welcome & Introductions <ul style="list-style-type: none"><li>• Project overview/requirements</li></ul>
5:20–6:00	Introduction to Our Project In Hawaii's Intertidal (OPIHI) <ul style="list-style-type: none"><li>• Intertidal ecosystem</li><li>• Historical overview of project</li></ul>
6:00–6:10	Q & A, Break
6:10–7:20	Introduction to watersheds and water quality <ul style="list-style-type: none"><li>• Definition</li><li>• Impacts</li><li>• Basic water quality measurements</li></ul> <i>Guest Lecturer: Tracy Wiegner, PhD</i>
7:20–7:30	Next Steps <ul style="list-style-type: none"><li>• Homework &amp; PDE3</li></ul>

**Homework #1**

1. Visit potential OPIHI field trip site. Complete HW on site visit.
2. Choose potential OPIHI field trip date/time (consider things like tide, time, and school schedule)

**January 27<sup>th</sup>, 2016 (Online: 5–7:30 pm) Intertidal Ecology**

<b>Time (pm)</b>	<b>Activity</b>
4:45–5:00	Participants sign in, Q & A, sound/technology “checks”
5:00–5:10	Welcome
5:10–5:50	Split into island cohorts–Present on homework <ul style="list-style-type: none"><li>• Where are you thinking of going? Share about site and site visit.</li><li>• Assistance/feedback from peers and facilitators</li></ul>
5:50–6:00	Q & A, Break
6:00–7:20	Introduction to intertidal ecology <ul style="list-style-type: none"><li>• Physical/chemical factors</li><li>• Organisms in intertidal–especially algae (ID basics)</li><li>• Cultural connections</li></ul> <i>Guest Lecturers: Heather Spalding, PhD, &amp; T. Erin Cox, PhD</i>
7:20–7:30	Next Steps <ul style="list-style-type: none"><li>• Homework, logistics of field trips and student research participation</li></ul>

**Homework #2**

1. Finalize OPIHI field trip site, date, time
2. Learn OPIHI intertidal species, including IDing organisms at your site

**Spring In-Person Dates, 2016**

(9–5 pm except O’ahu Feb. 20, Maui April 3, and Hawai’i March 23, which are 8–4 pm)

Island	O’ahu	Kaua’i	Maui	Hawai’i
Location	UH Manoa	Kapa’a HS	Kihei Maui Economic Development Board	UH Hilo
Field Location*	Diamond Head Beach Park	Waipouli Beach	Waipuliani Park	Onekahakaha Beach Park
Immersion Dates	Feb. 6 & 7	Feb. 13 & 14	March 12 & 13	March 22 & 23
Follow-Up Date	Feb. 20	Feb. 27	April 3	April 9
Optional Field Experience Date**	Feb. 21	Feb. 28	March 14	April 10

\* Subject to change

\*\*Approx. 3 hrs. around low tide, exact time TBD

**In-Person workshop Activities** Structured around low tide times, each “block” is 3–4 hrs, lunch in the middle

**Water Quality (field):**

- Introduction to site/watershed
- Water quality measurements using variety of equipment

**Sampling Introduction (classroom):**

- Introduction to sampling
- Introduction to sampling for abundance

**OPIHI Sampling (field)**

- OPIHI protocol

**Planning (classroom)**

- Introduction to database & other collaboration tools
- Plan implementation & field trips

**Disciplinary Extensions (field)**

- Biological extensions (e.g., species richness, plankton)
- Physical extensions (e.g., slope)
- Chemical extensions (e.g., additional water quality measurements)

**Analysis (classroom)**

- Analysis, graphing, and statistics of OPIHI data

O’ahu	Maui	Hawai’i	Kaua’i
<i>Immersion Day 1</i>			
Water Quality (field)	Water Quality (field)	Water Quality (field)	Sampling Introduction (classroom)
Sampling Introduction (classroom)	Sampling Introduction (classroom)	Sampling Introduction (classroom)	OPIHI Sampling (field)
<i>Immersion Day 2</i>			
OPIHI Sampling (field)	Planning (classroom)	OPIHI Sampling (field)	Planning (classroom)
Planning (classroom)	OPIHI Sampling (field)	Planning (classroom)	Water Quality (field)
<i>Follow-Up (Homework #3 prior to follow-up = enter immersion OPIHI data into database)</i>			
Discipline Extensions (field)	Discipline Extensions (field)	Discipline Extensions (field)	Analysis (classroom)
Analysis (classroom)	Analysis (classroom)	Analysis (classroom)	Discipline Extensions (field)

## OPIHI classroom activities & field experience with students

Implementation	Activity Name
Before Field Trip	<ul style="list-style-type: none"><li>• Introduction to Watersheds, the Intertidal, &amp; Water Quality</li><li>• Introduction to Species Identification</li><li>• Introduction to Sampling (Sampling Design)</li><li>• Introduction to Sampling for Abundance</li></ul>
Field Trip	<b>OPIHI Field Trip</b>
After Field Trip	<ul style="list-style-type: none"><li>• Data Analysis &amp; Interpretation</li></ul>

### Implementation Details

- *Prior to and after completing all activities*, have consenting students complete survey.
- Implement classroom activities between Immersion workshop and Online Sharing Session
- All activities will be drawn from the *Exploring Our Fluid Earth* online curriculum ([exploringourfluidearth.org](http://exploringourfluidearth.org))
- Each activity will take at least one class period. The watersheds and abundance activities will probably take two class periods. The data analysis activity will take 2–3 class periods.
- The amount of time the activities take will vary based on the age of your students, prior knowledge, and, the extent of their interpretation (e.g., of the data analysis activity).

### Homework #3

Participate in the *Exploring Our Fluid Earth* curriculum website's online learning community by commenting twice on OPIHI activities & responding to other people's comments

### March 2<sup>nd</sup>, 2016 (Online: 5–7:30 pm) Next Generation Science Standards

Time (pm)	Activity
4:45–5:00	Participants sign in, Q & A, sound/technology "checks"
5:00–6:00	Split into island cohorts—present on ongoing implementation Assistance/feedback from peers and facilitators
6:00–6:10	Q & A, Break
6:10–7:15	Next Generation Science Standards <ul style="list-style-type: none"><li>• Introduction and adoption details</li><li>• Connections to Hawaii Content and Performance Standards III</li><li>• Links to OPIHI project</li></ul> <i>Guest Lecturer: Lauren Kaupp, EdD, HIDOE Science Specialist</i>
7:15–7:30	Next Steps <ul style="list-style-type: none"><li>• Homework (continue project implementation) &amp; collaborations</li></ul>

### Homework #4

Prepare a short PowerPoint presentation about your students' OPIHI experiences

### Choose ONE: May 4<sup>th</sup>, May 5<sup>th</sup>, May 18<sup>th</sup>, May 19<sup>th</sup>, 2016 (Online: 5–7:00 pm) Sharing Session

Time (pm)	Activity
4:45–5:00	Participants sign in, Q & A, sound/technology "checks"
5:00–5:10	Welcome
5:10–6:30	Sharing Session <ul style="list-style-type: none"><li>• Present on implementation</li></ul>
6:30–7:30	Next Steps <ul style="list-style-type: none"><li>• Scientific analysis of results, opportunities to dissemination project &amp; post-PD tasks</li></ul>

### Post-PD Tasks

- Complete post-PD surveys (yourself & your students)