2/7/2018

(1)

Cascadia Recurrence Project - Santa Cruz

CMG has moved resources into Subduction Zone Science

Sherrod - uplift along Olympic Coast - NW Coast -
WAPE - Cape Neah Bay this year - entire coast will be
Holocene - ~800 yrs ago - uplifted 1.5-2 m
Wizette archeolology site

Hoko River - archeology site - river has incised its own platform -

5 m / 1700 yrs ≈ 3 mm/yr uplift

Rob Witter - Andrew Kemp - BSSA paper - Bayesian estimates of spatially variable Cascadia subsidence - 1700 event

Yvonne Milker - ± 0.29 m accuracy
Talbot Creek, Coos Bay 0.01 m to 0.63 m subsidence
Baysian Transfer Functions - yield higher amounts of "

Harvey Kelsey - Jay Padgett - URI - Humboldt Bay -
1800 yr record - 4 subduction zone eqs -

EQ1	250 yr BP	> 620 yrs	0.33 m	
2	870 ± 56 " "	> 255 "	0.33 "	18 radio carbon dates
3	1125 ± 82 " "	> 475 "	0.37 "	
4	1600 ± 51 " "		> 0.64 m	

amount of subsidence - forams

Bchron - models a sedimentation rate - more precise but unknown if more accurate?

Diatoms will give larger amounts of subsidence

the 1600 yr BP event was a big event across Cascadia - TS

Seanpaul Laselle - CMG -
High slip → thicker tsunami sand deposits
model tsunami deposition - hydrographic model

2/7/2018

Alan Nelson - OSL Dating of tsunami sands

Uriten Brink - Central Oregon - Scar ~~frequency~~ - fraction -
Central Oregon has more slide scars than expected
unusual steeping of outer slope
Plate bending steeper in Oregon than Washington
oversteepening of margin - reasons why not understood

Stephanie Ross - NTHMP - SAFRR -
NOAA & USGS bathymetry needs
Powell Center -
USGS Risk Plan - USGS Community of Practice
Need Uniform source models for both eq + tsunami = ??

Jason Chaytor - Marine event uncertainty -
New coring methods to obtain less deformed cores -
Accelerometers
Source to Sink (S2S)

Jenna Hill - legacy seismic data to map depocenters
Multibeam Rainier NOAA - $367K CALP 200-1600m
Chirp subbottom - Coral Sea - 15 m water depth depth

Nathan Miller - CALOP plans - main focus will be Cascadia
Systematic 2D seismics -
Chirp data to map Q deformation
>1600 m bathy NOLS vessels
Geodetic grade Multibeam bathymetry?
3D Hi-res work -

How to address Offshore Alaska

Joan Gomberg
Need a date at top & bottom of each core
$ for dating top & bottom core

Chris Goldfinger -
Rich Briggs - vertical sensitivity of subsidence
1992 M7.1 Petrolia - triggered ~~tsu~~ turbidite - mud turbidite -
$\Delta M = 1.4$ - 125 times more energy for turbidites than subsidence

2/7/2018

3

Chris Goldfinger – Lake paleoseismology –

Leland Lake, Olympic Peninsula

Lake Sawyer, King Co., WA

T3 is big in Washington ~~500~~ 850 Yr ago

Dinner at 7 PM – West End Tap Room & Kitchen / New Leaf 334 Ingalls Street

Ralph Haugerud – seamless onshore-offshore map

1:650,000 36" x 76"

1:250,000 or better

1:100,000

Erin Wirth – MQ Project

** California Clearinghouse – CGS, UCERF, Academics

Joan Gomberg – Site response –

JGR Paper out for 2 days

Scott Bennett –

Canyon River ~~Saddle Mtn~~ Fault? – ~0.5 mm/yr slip rate – left lateral

Leech River fault – right lateral – 1600 yra – T5 –

Ray Wells – Gales Creek fault – 51 quad maps around Portland –

largest fault in NW Oregon – late Holocene

200 km long – 150 km is active

Sub horizontal slickensides

0.4 mm/yr for past 15 my

Scoggins Dam – USBR dam –

tremor avoids seismicity –

Janet Watt - upper plate faulting produced greatest tsunami fatalities -
Saillard et al (2017) Chile

Rick Blakely - Doty Fault -
need aeromag maps along coastline are needed
~~aerog m~~
aeromag on shelf works well
Bill Stephenson - Hi-res seismic -

right stepping faults

Brian Sherrod - Doty Fault - Lydia Staisch - WADNR funded - mapping river terraces

Harvey Kelsey - Little Salmon Fault

John Perkins - GMEGSC - Klickitat Lake - drowned trees from landslide formed dam
230 landslide dams
Eos article in review
GSA 2017 Annual Mtg - session

** Hite Fault - Left-lateral ⟹ does not fit right lateral focal mechanism - does not fit either - just as Wallula fault does not fit left-lateral FM

Brian Sherrod - evidence for left-lateral faulting at east end of Wallula Fault - talk to Rick Blakely -

Goldfinger - rarity of offshore landslides

Fred Pollitz - Geodesy - Viscoelastic modeling - GPS velocities are more seaward trending

Jay Patton - GPS -

Jared Kluesschner - Costa Rica - 3D seismic - corrugated megathrust -

Nathan Miller -

Abers et al. - Nat Geoscien 2017 - Cascadia an anomaly
Canales

rapid response OBS's - $15K/each
2 week deployment
hope to build 10 OBS's

Discussion -

Transfer functions - most pdfs should be narrow peaks as a function of depth - USGS has no paleoecologist to do this work - taxonomy of species need to be agreed upon -

Subevent location - paleo slip models -

Location of persistent big slip patches

Are they persistent ?

100 M > 7.6 events - high freq patches

Event variability - how to quantify

Target developing 1700 rupture model

Regional 3D Vp & Vs model

OSU - Corvallis - 3D model - Earthscope - June -

Sherrod - Q fault & fold database -

Maureen Walton - Legacy seismic data - next year -

2/8/2018

Jon Perkins - Powell Center proposals

* What observations are needed to calibrate observations of previous earthquakes?

** - Whole Summaries - early career scientist -

Seismology section - <u>Keep in short!</u>