

**Tuesday 6th June: (Preconference, 12:00-17:00) 17:00-19:00 Registration 19:30 Reception (Both Kalvskinnet campus)**

**Wednesday 7th June, 08:00-09:00: Registration (Gløshaugen campus, main venue site)**

09:00-10:00 (EL5): Opening. Popular science lecture by Alex Strømme, NTNU: «Voyage to Eternity – on Man and Our Place in Space".

10:00-10:30 Coffee Break / Registration

10:30-11:30 **Keynote 1 (EL5): Astrid Sinnes: Science education for a sustainable future; what competencies do young people need?**

11:30-11:45 Find your parallel!

11:45	Room: EL21	Parallel 1a EL6	Parallel 1b EL5	Parallel 1c EL3	Parallel 1d EL2
<b>Session 1</b>	<b>Workshop 1</b> From single neuron to brain function – a brain building kit developed to fill in the missing link in school  <b>P Kvello, T Sneltvedt, K Haugstad, K Feren, JT Malmo, J Cyvin, T Solstad</b>	46: Sjøhyret - et tverrfaglig undervisningsopplegg om marin forsøpling innenfor utdanning for bærekraftig utvikling <b>W Sørmo, K Stoll, M Gårdvik</b>	37: Fra visjon til klasserom: Hva slags støtte trenger lærere for å fremme dybdeløring i naturfag? <b>B Haug, S Mork</b>	88: Teachers' use of the outdoor environment in teaching young children about living beings <b>K Norødhahl</b>	41: Building science teacher identity for grades 8-13 at the University of Oslo <b>C Tellefsen, D Jorde</b>
		39: Snapping stories in science - lokale hverdagskulturer og sosiale medier som inngang til naturfag og bærekraftig utvikling <b>M Ødegaard, E Boland, M Chu, T-K Delbekk, H Kristensen</b>	90: Should we sacrifice inquiry-based science education in order to climb on pisa-rankings? <b>S Sjøberg</b>	20: Why do preschool educators adopt or resist a pedagogical model that concerns science? <b>S Areljung</b>	48: Developing awareness of illustrative examples in science teaching practices: the case of the giraffe-problem <b>M Rocksén, G Johansen, B Bjønness</b>

13:00-14:00 **LUNCH**

14:00	Room: EL21	Parallel 2a EL6	Parallel 2b EL5	Parallel 2c EL3	Room: EL2
<b>Session 2</b>	<b>Workshop 2</b> Augmented reality i naturfagene – elever som produsenter av digitale, naturfaglige modeller  <b>H Brandt, B Lund Nielsen, H Swensen, O Radmer, M Surland, D Nieto, M Ramirez</b>	28: Naturfaglæreres vurderingspraksis, med et særskilt fokus på læringsprosesser knyttet til argumentasjon <b>T Walla</b>	31: Towards bildung-oriented science education – framing science teaching with moral-philosophical-existential-political perspectives <b>J Sjöström</b>	55: Teacher's stories of engaging science teaching. A delphi study on teachers' views on the factors that create engagement in a science classroom <b>C Abrahamsson</b>	<b>Workshop 4</b> Skolevirksomhedssamarbejde – elever der løser autentiske problemer i samarbejde med en virksomhed  <b>A Vestergaard Thomsen, N Troelsgaard Jensen</b>
		45: Uskarp forståelse: analyse av elevsvar knyttet til partiklers bølgeegenskaper og uskarphetsrelasjonene <b>H Ræder, C Angell, E Henriksen</b>	49: The concept of scientific literacy and how to realize contemporary science education practice discussed from an international perspective <b>C Bolte</b>	58: Towards a theoretical model for approaching motivation in the science classroom <b>J Sullivan Hellgren</b>	
		43: Grubletegninger som verktøy for å skape økt naturfaglig forståelse for elever og lærerstudententer. / <b>A Strande</b>	44: Achievement goal factor structure among chemistry students in grade 5 – 11. A comparison between Sweden and Germany <b>A Hofverberg, M Winberg</b>	19: Relevance or interest? Students' affective responses towards contextual settings in chemistry problems <b>K Broman, S Bernholt</b>	

Oral - English language

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Workshop

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Wednesday 7th June (continued)					
15:30-15:45	Find your parallel!				
<b>15:45</b>	<b>Room: EL21</b>	<b>Parallel 3a EL6</b>	<b>Parallel 3b EL5</b>	<b>Parallel 3c EL3</b>	<b>Parallel 3d EL2</b>
	<b>Workshop 3</b> Cella som system  <b>AR Skår, Ø Sørborg</b>	69: Elevers motivation och engagemang i en förändrad lärmiljö <b>A Westman, M Oskarsson</b>	62: Connecting orchestration and formative assessment in the technology rich science classroom <b>RL Staberg, M Febri, J Cyvin, SA Sikko, Ø Gjøvik, B Pepin</b>	30: Danish geography teachers thoughts concerning own teacher professionalism <b>S Witzel Clausen</b>	14: Developing a learning progression for students: from everyday to scientific observation in geology <b>KB Remmen, M Frøyland</b>
<b>Session 3</b>		71: Attitydmätningar med q-methodology <b>L Björklund, K Stolpe</b>	12: To flip or not to flip – Students' use of the learning material in a flipped university organic chemistry course <b>K Broman, D Johnels</b>	15: Elaboration and negotiation of new content. The use of meaning-making resources in multilingual science classrooms <b>M Axelsson, K Danielsson, B Jakobson, J Uddling</b>	33: Designing an ice cream making device: an attempt to combine science learning with engineering <b>K Vaino, T Vaino, C Ottander</b>
<b>17:15</b>		25: Students as producers of Augmented reality in science - developing representational competence trough scaffolded dialogue / <b>B Nielsen, H Brandt, H Swensen, O Radmer, M Surland, D Nieto, M Ramirez</b>	56: Argumentation in university textbooks: comparing biology, chemistry and mathematics <b>J Sullivan Hellgren, E Bergqvist, M Österholm</b>	66: Why many chemistry teachers find it difficult to ask good questions <b>M Stadler, F Kayima</b>	
18:00-20:30	<b>Excursion: Munkholmen</b>				

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Thursday 8th June					
09:00-10:00	<b>Key 2 (EL5): Woff-Michael Roth: <i>Dwelling: Toward a Phenomenological Foundation for Science and Environmental Education</i></b>				
10:00-10:15	Find your parallel!				
<b>10:15</b>	<b>Parallel 4 EL21</b>	<b>Parallel 4a EL23</b>	<b>Parallel 4b EL3</b>	<b>Parallel 4c EL6</b>	<b>Parallel 4d EL5</b>
<b>Session 4</b>	42 Symposium Nordisk modul for kompetanseheving av lærere i undervisning for bærekraftig utvikling <b>M Korsager, E Scheie, O Kronvald, M Rahbek Thyssen, J Bak Rasmussen, D Olsson, A Manni, H Näs</b>	72 Symposium Etablering av teknik/teknologiämnets innehåll i skenet av tekniskt kunnande <b>M Stoor, LO Voll, P Vinnervik</b>	57: Finns "förmågorna"? F Bach, B Frändberg, M Hagman, E West, <b>A Zetterqvist</b>	51: Lärares syften med kontextbaserade undersökande aktiviteter utvecklade under en lärarfortbildning <b>T Lunde</b>	54: A prescriptive model for how to use dialogues to stimulate students' learning processes in inquiry-based and traditional science teaching / <b>S Kolstø</b>
	<b>11:15</b>		32: Evaluering af ny tværfaglighed i naturfagene. <b>P Daughjerg, L Krogh, C Ormstrup</b>	59: Implementeringen af Flipped Learning i fysik/kemi-undervisningen i grundskolen <b>SK Nissen, H Levinsen</b>	82: The design and implementation of an assessment method combining formative and summative use of assessment / <b>J Dolin</b>
11:15-12:00	<b>Poster Session &amp; Coffee Break</b>				
12:00-13:00	<b>Symposium (EL5): National centers: Opportunities and challenges in disseminating from research to practice and the other way around.</b>				
13:00-14:00	<b>LUNCH with National Meetings</b>				
14:00-14:15	Find your parallel!				
<b>14:15</b>	<b>Room EL21</b>	<b>Parallel 5a EL23</b>	<b>Parallel 5b EL3</b>	<b>Parallel 5c EL6</b>	<b>Parallel 5d EL5</b>
<b>Session 5</b>	Workshop 5 Creating a material solution to a socio-scientific issue: making in the science and technology classroom <b>S Areljung, A Hofverberg, P Vinnervik</b>	23: Self-efficacy as an indicator of teacher success in using formative assessment <b>R Evans</b>	52: Samhällsfrågor med naturvetenskapligt innehåll och demokratisk fostran <b>T Lunde</b>	35: Language interference in understanding of Newton's 3rd law: case of norwegian primary school pre-service teachers <b>M Febri, JT Malmo</b>	27: Disciplinary Discernment from Hertzsprung-Russell-diagrams <b>U Eriksson, M Rosberg, A Redfors</b>
		68: Analysing representations of concept in physics textbooks for lower secondary school in Sweden – the concept of pressure <b>C Lagerholm, C Malmberg, U Eriksson</b>	24: Vejledning i længere-varende fællesfaglige forløb i naturfag - værktøjer og artefaktbaseret <b>L Krogh, P Andersen, H Brandt, K Conradsen, B Johansen, M Vogt</b>	50: Pre-service teacher understanding of buoyancy: case of primary school science teacher <b>KE Haugstad, M Febri</b>	93: The relation between subject teachers' universal values and sustainability actions in the school <b>A Uitto, S Saloranta</b>
		29: Contemporary science in the lower secondary physics classroom <b>L Hansson, L Leden, A Pendrill</b>		13: Collaboration between university and school – how do we make use of each other's competencies? / <b>K Broman</b>	
18:00	<b>Visit to Nidaros Cathedral / Nidarosdomen with Organ Concert</b>				
19:30	<b>Vintage Tram departs to Lian Restaurant</b>				
20:00	<b>Conference Dinner at Lian Restaurant!</b>				

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Friday 9th June				
09:00-10:00	<b>Keynote 4 (EL5): Pernilla Nilsson: <i>When teaching matters - Developing science teacher knowledge through collaboration and reflection</i></b>			
10:00-10:15	Find your parallel!			
<b>10:15</b>	<b>Parallel 6 EL2</b>	<b>Parallel 6a EL5</b>	<b>Parallel 6b EL4</b>	<b>Parallel 6c EL3</b>
<b>Session 6</b>	79: Hva legger lærere vekt på i begynneropplæringen i naturfag? <b>C Aksland, IK Jensen, AMS Ramton</b>	22: Making the invisible visible across modes and representations <b>E Knain, T Fredlund, A Furberg</b>	38: Finnish mentor physics teachers' ideas of a good physics teacher <b>M Asikainen, P Hirvonen</b>	36: Unpacking students' epistemic cognition in a problem solving environment <b>M Lindfors, M Bodin, S Simon</b>
	16: Teknikämnet i svensk grundskolas tidiga skolår sett genom forskningscirkelns lupp <b>P Gustafsson, G Jonsson, T Nilsson</b>	64: Teaching science using underdetermined representations: Illustration and implications <b>T Fredlund, E Knain, A Furberg</b>	60: Professional development of science and mathematics teachers for building student digital competence: experience of Latvia <b>I Dudareva, D Namsone</b>	91: The size of vocabulary and relations to reading comprehension in science <b>A Pálsdóttir, E Lind Þorisdóttir, S Ólafsdóttir</b>
11:15				
11:15-11:30	<b>Coffee Break</b>			
<b>11:30</b>		<b>Parallel 7a EL5</b>	<b>Parallel 7b EL4</b>	<b>Parallel 7c EL3</b>
<b>Session 7</b>		84: Does school science provide answers to "everyday life" questions? Student choices of information sources in open-ended inquiry <b>E Fooladi</b>	73: Development of a chemistry concept inventory for general chemistry students at norwegian and finnish universities <b>T Kiviniemi, P-O Eggen, J Persson, B Hafskjold, EE Jacobsen</b>	40: Changes in preservice teachers' knowledges. A case study from the new teacher education program at uita – the arctic university of Norway <b>M Olufsen, S Karlsen</b>
	12:30	26: Once again? - How an upcoming vaccination debate is portrayed in (Swedish) media <b>M Lundström, K Stolpe, N Christenson</b>	18: Student responses to visits to researchers' night events <b>S Walan</b>	74: Developing a Collaborative Model in Teacher Education – An Overview of a Teacher Professional Development Project <b>A Kervinen, A Uitto, A Kaasinen, P Portaankorva-Koivisto, K Juuti, M Kesler</b>
12:45-13:15	<b>Closing Address (EL5)</b>			
13:15-14:00	<b>LUNCH</b>			

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