

9th World Environmental Education Congress Preliminary Program Schedule

Symposia/Panels

A symposium usually involves a panel of experts or stakeholders who examine a specific theme or issue. The proposer controls presentations, discussion, and questioning with the assistance of the presider/discussant. Discussion will promote the expression of alternative viewpoints and theoretical positions. This format will be mostly reserved for plenary or general sessions.

Novel Format

In these sessions, presenters share work in an alternative format. There may be a number of novel format presentations scheduled at any time and these may occur inside meetings spaces or in public areas during the meeting. A facilitator will introduce the presenter(s) and will keep time for the session. Novel formats can be assigned timeslots from 30 minutes to 90-minutes, but normally individual presenters will be allotted 30 minutes.

*Novel format presenters will not be asked to prepare a PowerPoint presentation.

Paper Sessions

Only a limited number of paper sessions will be scheduled for each theme of the congress. In a paper session, a presider/discussant introduces the speakers, who then present an abbreviated version of their papers. Generally, each paper will be allotted 10 minutes for presentation, followed by 5 minutes of questions, critique, and/or discussion. The discussant and audience will use the remaining time for additional discussion, general review, and suggestions for further research.

*Paper session presenters will not be asked to prepare a PowerPoint presentation.

Round Tables

In discussion based round table sessions, each presenter is assigned a table or a circular arrangement of chairs where interested persons may gather for discussion with the presenter about his or her topic. The presenter makes a short, informal presentation followed by discussion that he or she controls. There may be several papers assigned to one room resulting in concurrent discussions throughout the room. A presider/discussant may be assigned; if so, the presider will introduce the presenters, explain the format of the session, and give a 5-minute warning of the session ending time.

*Round table presenters will not be asked to prepare a PowerPoint presentation.

Interactive Poster Sessions

Eight to ten posters will be assigned to one room organized according to a theme. Presenters must set up their displays (**maximum poster size: A0: 33.1 in (w) x 46.8 in (h) - portrait format**) prior to the start of the session and then promptly remove them at the end of the session. Each presenter will have 2-3 minutes to present a brief overview of his or her research at the start of the session. At the conclusion of the brief presentations, audience members will have approximately 45 minutes to circulate throughout the room to view the posters and interact with the presenters. At the conclusion of this time, the audience members will return to their seats for a large group discussion facilitated by the session presider or discussant (15 mins).

*Push pins will be provided onsite for presenters to pin their poster presentations to poster boards.

Opening & Closing Ceremony

Opening Ceremony

Date: Saturday, September 9, 2017

Time: 09:00 - 10:30

Room: West Ballroom A

- Recognising the Territory / First Nations
- Royal Welcomes
 - o The Honourable Judith Guichon, OBC - Lieutenant Governor of British Columbia, Canada
 - o Her Royal Highness Princess Lalla Hasnaa - Mohammed VI Foundation for the Protection of the Environment, Morocco
- Opening Remarks from WEEC 2017 Co-Chairs
 - o David Zandvliet - Institute for Environmental Learning, Canada
 - o Mario Salomone - WEEC Network
- Tblisi +40 Reflections (5 minute Video + Panel)
 - o Moderator: Milt McClaren - Royal Roads University, Canada
 - o Elliott Harris - United Nations Environment Programme
 - o Julia Heiss - UNESCO Team Leader of Education for Sustainable Development
 - o Ekaterine Grigalava - Deputy Minister of Environment and Natural Resources Protection of Georgia
 - o Tamar Aladashvili - Department of Environmental Policy and International Relations, Georgia
 - o Charles Hopkins - UNESCO Chair in Reorienting Teacher Education to Address Sustainability, York University, Canada

Closing Ceremony

Date: Wednesday, September 13, 2017

Time: 15:00 - 16:30

Room: West Ballroom A

Plenary Sessions

PLS-A: Dr. Jeannette Armstrong

Date: Saturday, September 9, 2017

Time: 15:00 - 16:30

Room: West Ballroom A

- Re-Indigenizing the Planet: Land, Learning & Education

PLS-B: Guujaaw

Date: Sunday, September 10, 2017

Time: 10:30 - 12:00

Room: West Ballroom A

PLS-C: Prof. Wade Davis

Date: Sunday, September 10, 2017

Time: 15:00 - 16:30

Room: West Ballroom A

PLS-D: Elizabeth May OC MP

Date: Tuesday, September 12, 2017

Time: 10:30 - 12:00

Room: West Ballroom A

PLS-E: Dr. Tara Cullis

Date: Tuesday, September 12, 2017

Time: 15:00 - 16:30

Room: West Ballroom A

PLS-F: Dr. David Suzuki

Date: Wednesday, September 13, 2017

Time: 08:00 - 10:00

Room: West Ballroom A

- The Challenge of the 21st Century: Setting the Bottomline in the Anthropocene

Special Sessions

IEL-A1: WILD BC Get Outdoors (Part 1)

Format: Workshop

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 109

IEL-A2: EE Across the Themes I

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 118

- ID: 733 - The Most Important Curriculum: Learning to Grow Food in a Changing Climate - *Julie Johnston, CA*
- ID: 1054 - Enhancing Healthy Foods in Schools through Multidimensional Hands-On Learning - *Patrick Gale, CA*
- ID: 1069 - Philosophy of naturalistic intelligence. In search of the lost link - *Consuelo Orozco Giraldo, CO*
- ID: 534 - Valuing Nature in Childhood: the first environmental conservation education intervention for preschool children living around Cuc Phuong National Park, Ninh Binh, Vietnam. - *Lan Ho, VN*
- ID: 780 - Analyzing the Efficacy of Environmental Topics Used in English Language Textbooks in Japanese Higher Education - *Joshua Jodoin, JP*
- ID: 455 - Creative Arts and Sustainability for Econnection in Early Childhood - *Kumara Ward, AU*
- ID: 665 - Wilding the Rubrics: Pondering Wild Pedagogies within Educator Training Programs - *Polly Knowlton Cockett, CA*
- ID: 578 - Green Impact: developing the agency of staff and students to transform campus culture - *Quinn Runkle, GB*
- ID: 246 - Power and Expertise in the Garden - *Megan McGinty, US*
- ID: 335 - Challenges and opportunities of an indigenous- non-indigenous environmental partnership - *Chris North, NZ*
- ID: 919 - Collaborative online learning for environmental education in the US and China - *Yue LI, US*

IEL-A3: EE Across the Themes II

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 118

- ID: 39 - The effect of environmental education on improving the mental health of children - *Seyed Mohammad Shobeiri, IR*
- ID: 69 - An Evaluation for Interpretive signage at World Heritage Site in China - *Xue Dong, US*
- ID: 87 - Integrating teaching and learning around the 7 Sustainable Development Goals of the Well-being of Future Generations (Wales) Act within Higher Education - *Carolyn Hayles, GB*
- ID: 90 - Hospitales Verdes, una retribucion social y ambiental con nuestra ciudad. - *Claudia Paz, CO*
- ID: 161 - University-wide Staff Sustainability Skills Survey - *Carolyn Hayles, GB*
- ID: 163 - University-wide response to the Well-being of Future Generations (Wales) Act - *Carolyn Hayles, GB*
- ID: 174 - Nature connection practices promoting self-knowledge and caring for nature - *Riitta Wahlström, FI*

- ID: 176 - Botanical Garden: COME IN! VSTUPTE! KOM IN! WEJD • _! GYERE BE! - *Kennert Danielsson, SE*
- ID: 178 - Pro-environmental Behavior Models of University Student for Mitigating Climate Change on Purchase of Green Products - *Tai-Yi Yu, TW*
- ID: 211 - Fighting Fracking Downunder an Older Women's Agenda: óNannagogy - the Knitting Nannas Against Gas (Australia) - *Lorraine Larri, AU*
- ID: 214 - Post-Sustainability and Environmental Education: Remaking Education for the Future - *Bob Jickling, CA*
- ID: 218 - Sacred Land: Potential Connections to Environmental Awareness and Engagement - *Janet Groen, CA*
- ID: 241 - Guardians of the Great Barrier Reef - Stewardship in Action - *Megan Connell, AU*

IEL-A4: The Building as Teacher: Sustainable Schools as Integrated Learning Environments

Format: Workshop

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 120

IEL-B: WILD BC Get Outdoors (Part 2)

Format: Workshop

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 109

IEL-C: Ecological Identity in Teacher Education

Format: Novel Format

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 109

IEL-D1: PICS Session - Innovative Tools for Learning Sustainability, Energy and Climate Change

Format: Workshop

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 109

This session will explore different interactive games to promote learning on energy, sustainable living and climate change. Each with the goal of mobilizing students to value sustainable actions and to motivate solutions on climate change:

1. Megawatts and Marbles: A playful approach to understanding power-systems - Benjamin Lyseng, Institute for Integrated Energy Systems
 - Participants take on the roles of power plants and work together to “generate” the required amount of electricity, represented by marbles
 - Participants have the opportunity to design and operate their own low-carbon power system
 - Experiential learning outcomes include the delicate generation-demand balance and behaviour of different power plants, from coal to solar
2. Learning about sustainable living through interactive games , Lyn Bartram, SIAT-SFU

- Two interactive games, the Energy Tree and the Water garden, in which the players can explore the impacts of daily activities on electricity and water use
- 3. Future Delta 2.0. An educational video-game for social mobilization on climate change , Stephen Sheppard, Deepti Mathew Iype and Alicia La Valle, CALP-UBC
- The Future Delta 2.0 (FD2) videogame enables real-time exploration, querying and creative problem solving of local climate change scenarios, allowing users to learn about potential impacts, adaptation solutions, and mitigation strategies to reduce carbon emissions. The purpose of FD2 is to enable the player (beyond high school students & teachers who have helped co-design & evaluate the game) to experience the choices and decisions that are involved in making Delta an attractive and resilient low-carbon community. This immersive and interactive tool provides an active learning environment that can be integrated into high school curricula, as well as accessed by anyone in the broader community. Guided by teachers and supplementary resources, students can help create alternative future scenarios through inquiry learning around real local issues of climate change. It offers teachers a powerful new tool that may add value to their existing methods and help them meet the new BC curriculum and student citizenship goals more efficiently and interactively.

IEL-D2: EE Across the Themes II

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 116

- ID: 259 - Development of educational programs emphasizing the nature experiences in biotope - *Akihiro Iijima, JP*
- ID: 266 – APLICACION INTERDISCIPLINAR DE TECNICAS EDUCATIVAS A LA PROBLEMATICA AMBIENTAL DE LOS HUMEDALES TIPO CAUCE AISLADO DE RIO VALLE DEL CAUCA COLOMBIA (2012-2016) - *Luis Gonzalez Escobar, CO*
- ID: 278 - NO EASY WAY OUT -How fast does in-situ conservation education wear off: the case study of the critically endangered Philippine Cockatoo Conservation Program in Palawan, Philippines - *Indira Dayang Widmann, PH*
- ID: 287 - Las practicas de Egresados de programas de maestria en educacion ambiental: caso de una profesora de biologia de educacion secundaria - *Oswaldo Escobar Uribe, MX*
- ID: 308 - The Status of Nonformal EE in Taiwan: The spectrum of promoting environmental education facilities through EE Act - *Yi-Hsuan Hsu, TW*
- ID: 316 - Tool-kit for teaching Climate Change - Delivering climate science education and increasing scientific literacy through simulation, games and inquiry - *Savannah Poirier Hollander, CA*
- ID: 341 - Investigation into the Core Competencies Required for "Environmental Educators" to Work in an Environmental Education Learning Center - *Traishar Kao, TW*
- ID: 344 - Reuse centre as a place to learn about sustainability - *Elena Saarikallio, FI*
- ID: 348 - Learning community development and increasing personal agency in a 15-week, residential, place-based sustainable education: successes and suggestions. - *David Ostergren, US*
- ID: 391 - Norwegian and Australian children's understanding of sustainability related issues in their kindergarten and home - *Barbara Maria Sageidet, NO*
- ID: 427 - Making field trips in nature effective: The interplay between novelty and learning - *Peter Van Petegem, Jan Van Hoof & Jelle Boeve-de Pauw, BE*

IEL-E1: UNEP Session - Promoting Sustainable Lifestyles in Higher Education

Format: Workshop

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 109

We make millions of decisions in our lives. For the lucky amongst us, those decisions vary wildly. What to eat? Where to live? How to get around? What to wear? What to do for fun? No matter how we answer these questions, the lifestyles we live determine our quality of life and have a profound impact on the planet – affecting everything from how economies grow to the health of the environment. Global issues like climate change and pollution are symptoms of human activity to produce and consume (to meet basic needs and desires) around core lifestyle domains (ie. food, housing, mobility, leisure and consumer goods). Harnessing the power of individual decision making -holistically- for sustainability could be a game changer. Educating young people – who are setting today’s trends and will be tomorrow’s decision makers – is the key leverage point.

Fifty per cent of the world’s population is under 25 and most of them live in urban areas across the globe. Currently they are inspired by ‘traditional’ relatively wasteful consumption trends so education is critical. Ironically, today’s youth are the last generation who can take action to achieve the Sustainable Development Goals in 15 years. We need to develop and apply new tools and approaches to encourage understanding and behavioural change towards sustainable lifestyles. Educators and academic institution managers, working with students and others in collaborative efforts, are positioned to equip students with the needed understanding and skills for sustainable consumption/sustainable development for their future professional and personal lives.

UN Environment supports enhancing understanding and action research on sustainable lifestyles on campus, including awareness raising and curricula development. Working with members of the Global Universities Partnership on Environment and Sustainability and building on the emerging evidence from the Consumption and Sustainable Lifestyles Hub, UN Environment hopes to support a generation of graduates for whom sustainability is the platform upon which lifestyle choices are built. This session will explore what are sustainable lifestyles and how universities and youth can engage and promote sustainable lifestyles on campus and in their futures. The event programme will include:

1. Defining a sustainable lifestyle (15 minutes)
2. World Café of case studies from universities (30 minutes)
3. Q&A (10 minutes)
4. Closing (5 minutes)

IEL-E2: EE Across the Themes III

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 116

- ID: 466 - The Zayed Future Energy Prize Global High Schools Award: A Unique Approach to Environmental Engagement and Education - *Nawal Al Hosany, AE*
- ID: 472 - Medicina Tradicional Mexicana y la Educacion Ambiental - *Alma Cuevas-Nunez, MX*
- ID: 490 - Educacion ambiental en un Area Natural Protegida con la incorporacion de estudiantes universitarios. - *Elena Arano Leal, MX*
- ID: 492 - NUEVOS PARADIGMAS EN LA RELACION HOMBRE NATURALEZA EN LOS ANDES – *German Callejas, ES*
- ID: 495 - Environmental Education Certificate Program of Distinction - *Molina Walters, US*
- ID: 509 - Field-based study in tertiary biological sciences: an endangered species? - *Frances Quinn, AU*
- ID: 529 - Saving Nemo through Aquaculture Conservation and Citizen Scientists - *Karen Burke da Silva, AU*
- ID: 542 - Place-based Education in the Anthropocene - *Bob Coulter, US*
- ID: 551 - In children's neighborhood: Bunyaville environmental education center, Queensland, a case study from a close and from a long-distance perspective - *Barbara Maria Sageidet, NO*

- ID: 562 - On-site Solar Energy Generation: The Opportunity for Experiential Learning - *Sarah Finder, DE*
- ID: 603 - Confronting Health-related Challenges of Climate Change through Higher education program - *Pei-Chih Wu, TW*
- ID: 620 - Ecole verte Fatick/Catalogne - *Mamadou TOURE, SN*
- ID: 648 - Know*ledge Constellations and Re*constellating: Narratives to Inform Indigenous-and-Environmental Education - *Brigitte Evering, CA*

IEL-F: EE Across the Themes IV

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 118

- ID: 654 - Environmental education and sustainable tourism in Ember indigenous communities of the Chagres River - *Rolando Checa Campos, PA*
- ID: 664 - Environmental Education Centers: A European Paradigm - *Constantinos Yanniris, GR*
- ID: 702 - Ecological sanitation technology and agriculture - *SARRA KITANO, MA*
- ID: 721 - Special management waste in the ENMS Leon, Universidad de Guanajuato: the collection center - *Juana Ortiz Cienega, MX*
- ID: 734 - How Can "Pokemon Go" Apply to Your Environmental Education Program? - *Xue Dong, US*
- ID: 736 - The land value for indigenous peoples of the Amazon region of Acre, Brazil - *Rosely Imbernon, BR*
- ID: 757 - Cultural Literacy/Environmental Education - *Barry Wood, US*
- ID: 763 - Assessment of competencies for sustainability in secondary education in Mexico - *Jorge Rodriguez Aboytes, MX*
- ID: 772 - Eco-san Latrine System and Its Acceptability by the Community in Democratic Republic of Congo - *Stanis Koko, CD*
- ID: 773 - Educational Commons: Strategies, barriers and innovations in teaching Sustainable Development - *Cristina Capineri & Silvia Aru, IT*

IEL-H: UNEP Session - Supporting Policy through Education - No More Plastic Bags in Kenya

Format: Workshop

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 109

Organized by UN Environment together with Kenya's National Environment Management Authority this event will present the recent plastic bags ban introduced by the Government of Kenya, including the use, manufacture and import of any plastic bags in the country. The event will explore the education initiatives that accompanied the ban and discuss their impact on public opinion, uptake and media coverage. The event programme will include:

1. Presentation on the plastic bags ban by NEMA (5 minutes)
2. Q&A (5 minutes)
3. Delivery of sample education actions (15 minutes)
4. Break-out group development of a policy-relevant lesson plan (25 minutes)
5. Reflections and closing (10 minutes)

IEL-J1: EE Across the Themes V

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 109

- ID: 154 - IMPACT OF CLIMATE CHANGE ON AGRICULTURAL ECONOMIC - *Karuna Ghimire, NP*
- ID: 950 - Agriculture and Garden Based Learning: Life Improvement with Agriculture (Productive land management) - *Brumel Murutanganji, BI*
- ID: 516 - Teaching about Invasive Species - *Sue Staniforth, CA*
- ID: 360 - Honoring our Elders: Learning Science through Place-Based Approaches - *Yuen Sze Michelle Tan, CA*
- ID: 1037 - Embodied Earthflow and Ecofractal Dance: Jumping Levels of Emergence while Jumping Up - A Garden Co-Encounter - *Marna Hawk, US*
- ID: 1043 - TNC China Youth Engagement Program - *Xinchen Wei,*
- ID: 1055 - An Examination of the Research and Innovative Planning Initiatives of North America's Largest Solar Driven Sustainable Green Florida Community - *William Hammond, US*
- ID: 923 - Significance and possibility of indigenous environmental education research from Japanese context: A new method and approach - *Yuko Oguri, JP*
- ID: 416 - A Critical Review of ESD in Japan: Beyond the Practice of Pouring New Wine into Old Bottles - *Yoshiyuki Nagata, JP*

IEL-J2: EE Across the Themes VI

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 115

- ID: 788 - Recurrent drought in Somalia and Genuine factors behind it - *Mohamud Ahmed, SO*
- ID: 847 - Learning the river culture by playing, studying and discussing. (Results and experiences from case studies) - *Elena Comino, IT*
- ID: 859 - The Process of equipment: Perceptions of Technology, Skill, and Risk in the Outdoors - *Kevin Fraser, CA*
- ID: 889 - Getting Australian teachers started with sustainability - *Mark Caddey, AU*
- ID: 939 - Inclusion, equality of opportunity and perception of the environment in the higher education system in Morocco. - *Mohammed YOUNI IDRISI, MA*
- ID: 958 - Teaching Global Indigenous cultures to young learners - *Sophia Hunter, CA*
- ID: 974 - Educate to walk together: free ludic spaces for children. - *Maria Montalbano, IT*
- ID: 1002 - Explorations in the Practice of Eco-Art: A Phenomenological Arts Informed Research Project - *Vivian Wood-Alexander, CA*
- ID: 1014 - Beach Investigators - *Mark Bryant, US*
- ID: 1025 - Blended Learning in Development - *Jaime Webbe, KE*
- ID: 1026 - Developing attentiveness and empathy through eco-poetic listening and inquiry - *Susan Gerofsky, CA*

IEL-K: EE Across the Themes VII

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 109

- ID: 598 - LA NATURALEZA COMO MAESTRA: Educacion Ambiental en el area de influencia de ITAIPU Binacional - *Ada Rivas de Escobar, PY*
- ID: 831 - El ambito rural de Mexico. Espacio posible de la educacion ambiental que impulse proyectos productivos sustentables. - *Jose Silverio Morales, MX*

- ID: 832 - Estudio ambiental integral de la zona lacustre-chinampera de San Pedro Tiahuaac CDMX. Hacia una propuesta para apuntalar procesos de conservación biológica y productivos, mediante una estrategia de educación ambiental. - *Jose Silverio Morales, MX*
- ID: 701 - Performance of External Membrane Bioreactor for wastewater treatment and irrigation reuse - *SARRA KITANOU, MA*
- ID: 110 - Microorganisms as new expression systems in technology - *Foroogh Nejatollahi, IR*
- ID: 865 - Analisis de los articulos científicos de Investigacion en Educacion Ambiental de paises Iberoamericanos - *Antonio Fernandez Crispin,*
- ID: 1057 - Unlocking the hidden power of worldviews: a new opportunity for the transformative Education for Sustainable Development - *Emilia de la Sienna, AU*
- ID: 1067 - “Good, better, best”: how do we label practice in environmental and sustainability education, and should we? - *Richard Kool, CA*
- ID: 1068 - Fostering positive changes towards community wastes and the environment: Testing an environmental education intervention in a Chinese Loess Plateau village - *Aiqin Wang, CN*
- ID: 1070 - A socioecological approach to landscape interpretation in biosphere reserves; the case of Montseny biosphere reserve - *Cinthia Pereira, SP*

Agriculture and Garden-based Learning

AGL-A: Garden Based Learning in Post-Secondary Education

Format: Roundtables

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 116

- ID: 25 - Gardening in Your Classroom - *Monica Pastor, US*
- ID: 320 - Service learning through traditional medicinal and pollinator garden design - *Caitlin Gilson, US*
- ID: 460 - Food from my campus: A case study of action-orientated program about sustainable food in a university in Taiwan - *Mengyuan Jen,*
- ID: 872 - The right to cultivated city, between environmental education et food education : Example of urban agriculture on university campus, in France - *Clarisse Pinel, FR*

AGL-B: Collaborative and Community Based Learning in Gardens

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 116

- ID: 11 - Collaborative research to enhance wellbeing through school and community gardens - *Son Truong, AU*
- ID: 527 - Primary school gardens as mediators of pre-service teachers' environmental activism - *John Cripps Clark, AU*
- ID: 591 - Rehabilitation et Valorisation des jardins historiques : un espace d'apprentissage, de decouverte et de sensibilisation collective pour la protection de l'environnement. - *Loubna Chaouni, MA*
- ID: 687 - School Garden Learning Collaborative: the joining of formal and informal garden-based educators - *Sarah Stapleton, US*
- ID: 28 - From Seed to Table to Actually Eating It! Impact of a Garden-Based Learning Experience in Children's Fondness to Trying and Eating Edible Plants. - *Tathali Urueta-Ortiz,*
- ID: 1036 - Caring Well for People and Places: Hands-on Approaches in the Community - *Shai Kroeker, CA*
- ID: 1017 - Aquaponics: out of the water and into the classroom - *Gay Bingham, US*

AGL-C: Sustainable Development through Community Based Gardening

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 116

- ID: 71 - Global Learning in local school gardens through virtual school garden exchanges - *Johanna Lochner, DE*
- ID: 107 - Climate Change and Agricultural Production program - *Margit Sare, EE*
- ID: 747 - Garden based learning in Environmental Education Centers and Networks in Greece - *FOTIOS PONTIKAKIS, GR*

AGL-H (Roundtables): The Berlin Connection: Conference Meet Up with Urban Farming Conference Berlin

Format: Roundtables

Date: Tuesday, September 12, 2017



Time: 13:00 - 14:30
Room: West Meeting Room 116

Architecture and Green Design

ARC-B: Green Education Policy

Format: Paper Session

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 113

- ID: 204 - How can Energy Efficiency be implemented as a Product Service System - *Dirk Franco, BE*
- ID: 58 - 360 degrees of change: 360 tonnes of greenhouse gas emissions reduction in a school setting - *Elaine Lewis, AU*

ARC-C: Sustainable School Design

Format: Paper Session

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 113

- ID: 540 - Using school buildings and facilities to create a low carbon future - *Portia Odell, AU*
- ID: 203 - The Non Energy Benefits of Energy Efficiency for Higher Education Institutes in combination with Global Reporting Initiative accelerate Sustainable Development. - *Dirk Franco, BE*
- ID: 233 - ENVIRONMENTAL POWER PLANT PROJECT - *Micheli Machado, BR & Estevão Vernalha, BR*

ARC-D: Environmental Design Education Techniques

Format: Paper Session

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 113

- ID: 1011 - Designing Regenerative Futures: A Lively, Transdisciplinary Design Conversation with Permaculture and Regenerative Design, Co-Design, and Embodied Gestural Studies - *Marna Hawk, US*
- ID: 1039 - Innovative Participatory Urban Design and Planning Can't Be Ignored in EE - *Julia Morlacci, CA*

ARC-H: Green Building Materials

Format: Paper Session

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 113

- ID: 247 - SUSTAINABLE CONSTRUCTION AND ENVIRONMENTAL EDUCATION - *Micheli Machado, BR & Estevão Vernalha, BR*

Arts-Based Approaches in EE

AEE-B: Image and Media-based Environmental Learning

Format: Paper Session

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 115

- ID: 158 - Speaking 4 the Planet - *Phil Smith, AU*
- ID: 323 - Animated movies as a tool for environmental educators - *Daniel Herrera Bojorquez, MX*
- ID: 256 - Weaving new connections between the Arts and Sustainability: Researching children's responses to Chris Jordan's images - *Lyndal OGorman, AU*
- ID: 222 - Bioregional Map Making - *Nathalie Olson, CA*

AEE-C: Body Movement, Performance and Mindfulness

Format: Novel Format

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 115

- ID: 452 - EnACTment of future selves using nature and arts engagement - *Kumara Ward, AU*
- ID: 449 - Performance and ecological understanding - *David Wright, AU*

AEE-E: Arts-based Urban Education

Format: Novel Format

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 115

- ID: 614 - Broadening the Appeal: integrating arts and environmental education in the Toronto Region - *Rachel Stewart, CA*

AEE-F: Performing Arts and Sculptural / Tactile Approaches

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 115

- ID: 588 - Sustainable dramas for head and body - *Marianne Odegaard, NO*
- ID: 436 - Enhancing and reinforcing the interplay of nature and music with elementary school students - *Matthew Yanko, CA*
- ID: 854 - Artists as Culture-Makers: Educating for a Culture of Waste Reduction through Marine Debris Art - *Jennifer MacLatchy, CA*

AEE-H: Arts-Based EE Interactive Poster Session I

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 115

- ID: 447 - The Power of the Cow - Art + Agriculture = Food/Biosecurity, and Climate Change education in Australian schools - *Lorraine Larri, AU*
- ID: 383 - The use of the arts to raise awareness among elementary school students about endangered species like the gisani of Rhodes. - *Vasileios Papavasileiou, GR*
- ID: 379 - JUGAR A LA SUSTENTABILIDAD AMBIENTAL - *MAURICIO GUERRERO, MX*

AEE-K: Arts-Based EE Interactive Poster Session II

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 115

- ID: 37 - Stream of Dreams 'Fish on Fences' - *Louise Towell, CA*
- ID: 719 - Promoting Arts Based Environmental Education for Primary School Pupils in Guyana - *Paulette Bynoe, GY*
- ID: 877 - Nature and Art in Environmental Education - *Ana Olga Medina, PR*

Early Childhood Education (ECE)

ECE-A: Teachers and Pre-service Teachers and ECE

Format: Roundtables

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 119

- ID: 65 - Environmental education and knowledge about the water cycle among Pre-service Teachers - *Abidelfatah Nasser, IL*
- ID: 518 - THE TEACHERS PRAXIS AS A WAY TO UNDERSTAND ENVIRONMENTAL EDUCATION - *MARILIA CAMPOS, BR*
- ID: 568 - Environmental Educators as Sustainable Behavior Change Gatekeepers - *Anna Kettunen, FI*

ECE-B: Being Outdoors in Early Childhood

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 119

- ID: 626 - Being outdoors in Norwegian Kindergartens - *Tuula Skarstein, NO*
- ID: 147 - Forest school programs: A review of the literature on this growing movement - *Elizabeth Boileau, CA*
- ID: 691 - Teenagers and toddlers at forest school - *Irit Lador, IL*
- ID: 941 - Imitations Role as a Pedagogy for Environmental Awareness and Outdoor Skill Development: From Indigenous Practices to Canadian Forest Schools - *Zabe MacEachren, CA*
- ID: 279 - Understanding the children's ecosystem interrelationship through 'the Living things in the park' Project - *Okjong Ji, KR*

ECE-C: Arts Based EE and ECE

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 119

- ID: 339 - Music and play as methods for ESD in early childhood education - *Maire Turunen, FI*
- ID: 364 - The Storied landscape of Early Childhood. Weaving the land into our lives - *Victoria Finucane-Bell, CA*
- ID: 1006 - POTTERS CHILDREN: ENVIRONMENTAL EDUCATION OF CHILDREN THROUGH SEQUENCES OF TEACHING AND LEARNING - *Cesar Nava,*
- ID: 841 - Drawings as a methodological tool to evaluate knowledge and attitudes towards animals in kindergarten's children - *Antonio Fernandez Crispin, MX*

ECE-D: Urban ECE

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 119

- ID: 216 - ESD-Coalition of Kindergarten and community for Energy transition - *Ute Stoltenberg, DE*

- ID: 921 - Empower the public to take action for conservation in cities: a case study of Shanghai Wishing Star Lake Park nature guide book - *Lin Chen, CN*
- ID: 368 - Energias renovables, una tematica de conexion entre asignaturas - *Nelson Arias Avila, CO*

ECE-F: Citizenship, Identity & Conceptions of Nature

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 119

- ID: 52 - The Power of Childhood Attunements in Nature to Shape Adult Socio-Cultural Behaviors This workshop is designed to share my recent integral research on Cultural Ways of Forming Ecological Identities and Factors Affecting Their Ontologies. Workshop partic - *Betsy Jardine, CA*
- ID: 131 - THE THEORY AND PRACTICES OF MEDIATED LEARNING EXPERIENCE - *Bhavishya Sunar, NP*
- ID: 157 - Children as Agents of Change for Environmental Sustainability: An Early Childhood Case Study - *Ann Montague, CA*

ECE-G: Community Workshop – Lynn Canyon Ecology Centre

Format: Workshop

Date: Monday, September 11, 2017

Time: 10:00 - 16:00

Room: Lynn Canyon Ecology Centre (3663 Park Rd, North Vancouver, BC V7J 3G3)

- ID: 271 - Complexifying child nature/culture encounters to counter the Anthropocene - *Debra Harwood, CA*
- ID: 756 - From the Bubble to the Forest: Nature School Environmental Education - *Barry Wood, US*
- ID: 371 - Pedagogies for Sustainability in Bush Kinder - *Fran Hughes, AU*

ECE-H: EE/ESD in Early Childhood

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 119

- ID: 81 - Education au developpement durable au Benin et en Belgique - *Séverin Tchibozo, BJ*
- ID: 165 - International perspectives on early childhood education for sustainability in the Asia-Pacific: Weaving new connections for change - *Lyndal OGorman, AU*
- ID: 930 - Practice and Exploration of Environmental Education 1 + N in Sichuan, China - *Xiaohua Zhu,*
- ID: 390 - Exploring Early Childhood Learning Environments in terms of ESD and Media Literacy: A Needs Assessment Study of the Turkish Context - *SULE ALICI, TR*

ECE-J: National Issues and Early Childhood Education

Format: Roundtables

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 119

- ID: 97 - Benefits of educating flood environmental risk to primary school students: experience from Sudan - *Eltigani Abdelgalil, SD*
- ID: 475 - SCHOOL AND NON-SCHOOL CHILDREN AND ENVIRONMENTAL PROTECTION - *NDASHIMYE DARYL, BI*

- ID: 329 - The application of environment education in Iraq, goals and real situation - *Alaa Abdullah, IQ*

ECE-K: Child-Nature Encounters

Format: Roundtables

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 119

- ID: 378 - Reconsideration of Spirituality in Japanese Culture: From a Practice of a Nursery School Based on Waldorf- and Forest Pedagogy. - *Momoko Kono, JP*
- ID: 530 - Raising children in this time of eco-socio-political distress - *Nicholas Stanger, US*
- ID: 653 - The Role of Screen Based Technologies in Altering our relationship with Our Global Environment and Each Other - *Mari Swingle, CA*
- ID: 783 - How do environmental educators engage young children with animals in order to forge deeper interspecies bonds? - *Patty Born, US*

Environmental Communication (and Uncertainty)

COM-B: Youth and Schools

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 111

- ID: 7 - Metaphors for teaching concepts in ecological restoration: Three examples - *Valentin Schaefer, CA*
- ID: 326 - Local Government Institutes of Environmental Research in Japan can be New Educational Resources for Scientific Literacy in the Region? - *Yoshinori Saitoh, JP*

COM-C: Literacy and Language

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 111

- ID: 343 - THE ROLE OF AGGRESSIVE ADVERTISING AND SUBLIMINAL SUGGESTION IN PUBLIC AWARENESS THROUGH ENVIRONMENTAL EDUCATION - *Timothy Phiri, ZM*
- ID: 431 - Communicating about Unique Aspects of RCE Greater Burlington via Sustainability Stories - *Thomas Hudspeth, US*
- ID: 528 - Judging the credibility of environmental communications in a new information landscape - *John Cripps Clark,*

COM-D: Citizens and Communities

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 111

- ID: 570 – Trophees Lalla Hasnaa littoral durable - *Sami EL IKLIL, MA*

COM-E: Biodiversity

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 111

- ID: 299 - How many butterflies will lose their habitats? - Communicating biodiversity research using virtual and real European butterflies - *Karin Ulbrich, DE*
- ID: 32 - Attitudes and knowledge about the marine ecosystem: An exploratory study in northern Peru - *Daniella Biffi, US*

COM-F: Risk and Uncertainty

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 111

- ID: 488 - The study of environmental risk communication strategy: an example of environmental communication of climate-change - *Yuh Yuh Li*,
- ID: 354 - Citizen science in drought research: does getting hands-on with ecology alter volunteer perception of risks and resilience? - *Patty Ramirez, GB*
- ID: 618 - Teaching anticipation for sustainability: Sitting with uncertainty. - *Senan Gardiner, DE*
- ID: 565 - Pedagogical strategies for teaching how to manage contradictory and uncertain environmental knowledge - *Rebekah Tauritz, GB*
- ID: 470 - An International Study on Education and Resilience with Special Focus on Disaster-Affected Areas in Asia and the Pacific - *Yoshiyuki Nagata, JP*

COM-G: Environmental Media

Format: Paper Session

Date: Monday, September 11, 2017

Time: 10:00 - 16:00

Room: Mountain Equipment Co-op Head Office (1077 Great Northern Way, Vancouver, BC V5T 1E1)

- ID: 673 - Transferring a boardgame into an environmental education activity - A case study on the 'Upstream-Downstream' - *Yu-Jie Chang, TW*
- ID: 47 - How an Interactive Popular Science Video for New Media Increases Audience's Understanding of Environmental Issues: Contrasting Persons with an Environmental Science Background vs. Those with a Non-scientific Background - *MeiYing Tsai, TW*
- ID: 349 - Le E-learning : une autre facon d'apprendre - *Ihssane El Marouani, MA*
- ID: 824 - An innovative approach to communication and dissemination of the "culture of sustainability" - *Francesca La Greca & Maria Quarta, IT*
- ID: 144 - Integrating Information and Communication Systems in Urban Environmental Education for Global Transformation Initiatives - *Kalpana Chaudhari, IN*
- ID: 617 - ENVIRONMENTAL EXHIBITION AS A METHOD OF COMMUNITY'S CAPACITY BUILDING IN ENVIRONMENTAL ISSUE - *Susy Suwandi, ID*

COM-H: Climate Change I

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 111

- ID: 30 - CLIMATE CHANGE MITIGATION PRACTICES TO PROMOTE SAFE WATER AND SANITATION IN NANGABO SUB COUNTY - *Norman Juuko, UG*
- ID: 596 - Climate Change Keywords Mining in the News and Secondary Science Textbooks in Taiwan - *Chih-Ling Peng, TW*
- ID: 808 - Fueling change? Exploring guilt in climate change communications - *Caitlin Hill, CA*

COM-J: Climate Change II

Format: Roundtables

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 111

- ID: 433 - Environmental Communication: reflections in the field of Climate Justice for the inclusion of people with visual impairment - *Gomes, BR*
- ID: 405 - LAS REPRESENTACIONES SOCIALES DEL CAMBIO CLIMATICO EN UN GRUPO DE ESTUDIANTES DE LA UNIVERSIDAD DE SANTIAGO DE COMPOSTELA: CULTURA COMUN VS. CULTURA CIENTIFICA - *Kylyan Bisquert i Pérez, ES*

COM-K: Higher Education

Format: Roundtables

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 111

- ID: 56 - Modelling sustainability through energy-saving on campus: Student perspectives from 8 universities in 3 countries - *Debby Cotton, GB*
- ID: 193 - How does academic environmental education change the way students evaluate the severity of environmental problems? - *Nurit Carmi, IL*
- ID: 330 - Cinco formas de comunicar la educacion ambiental en contextos inciertos en Mexico (1992-2017) - *Rafael Ramirez Beltran, MX*

Ethics Lead Learning in EE

ELL-B: Ethics and Learning/ Schooling

Format: Roundtables

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 113

- ID: 10 - Adopting Sustainability through Whole School Community Approaches - *PETER MILNE, GB*
- ID: 170 - School Culture, Sustainability and the New Finnish Core Curriculum for Basic Education - *Niina Mykrä, FI*
- ID: 1023 - Deep Ecology in Life and Work - A Teacher Educator's Autoethnographic Inquiry as a Way to Respond to "TRC Calls to Action" - *Xia Ji, CA*
- ID: 879 - The Role and Contribution of Humanistic Ethics in Environmental Education Learning - *Jorge Rodriguez Aboytes, MX*
- ID: 892 - Learner-centered pedagogies for sustainability - *Mark Caddey, AU*

ELL-D: Perspectives on Values Education

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 113

- ID: 292 - Children's Thinking Patterns in Environmental Ethics Development - *Jitikan Jinarak and Tassanee Ounvcihit, TH*
- ID: 589 - Value education is embedded in the process of playing a simulation game twice - *Jen-shiuan (Susan) Shiau, TW*
- ID: 576 - The Sulitest : raising awareness and assessing sustainability literacy worldwide - *Aurelien DECAMPS, FR*
- ID: 575 - Holistic, experiential and balanced: The fundamental principles on an ethically-based environmental education - *Calin Gurau, FR*

ELL-H: Case Studies in Ethics I

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 113

- ID: 506 - Pro-poor Environmental Education and Sustainable Livelihoods: A Case Study at a Small Recreational Fish Farm in Taiwan - *Hui-Nien Lin, TW*
- ID: 411 - EDUCAR PARA UNA CULTURA DE LA SOSTENIBILIDAD EN LOS CENTROS EDUCATIVOS DE GALICIA - ESPANA - *German Vargas Callejas, ES*
- ID: 737 - Environmental ethics and the impacts of mining: the case of Mariana, MG, Brazil - *Rosely Imbernon, BR*
- ID: 566 - Can we transform Economics into an environmentally-sustainable science? - *Calin Gurau, FR*
- ID: 744 - A study on developing a pilot biodiversity educational tool to communicate the discord between wildlife and humans - *SHIHO MIYAKE, JP*
- ID: 265 - Food Consumption Behaviour: A Case Study at University of Gavle, Sweden - *Bo Lennart Andersson, SE*

ELL-J: Case Studies in Ethics II

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 113

- ID: 215 - Environmental Education, Ethics and Action: Re-imagining critical skills for sustainable lifestyles and global citizenship - *Bob Jickling, CA*
- ID: 149 - The unspoken place of environmental violence in environmental education - *Richard Kool, CA*
- ID: 644 - CAMINOS EDUCATIVOS PARA UNO CONVIVIO MEJOR ENTRE HUMANOS Y JAGUARES - *Lakshmi Hofstatter, BR*
- ID: 635 - MEMORIA Y AUTOCONOCIMIENTO EN LAS EXPERIENCIAS AMBIENTALES URBANAS COMO UNA PROPUESTA EDUCATIVA - *Lakshmi Hofstatter, BR*
- ID: 834 - El concepto de sustentabilidad. - *Jose Silverio Morales, MX*
- ID: 860 - An Ethic of Belonging for Outdoor Education within a Sustainability Paradigm - *Philip Mullins, CA*
- ID: 969 - CARE CONSTRUCTION THROUGH PRUDENCE AND BENEVOLENCE AS A PRACTICE FOR A HARMONIC SUSTAINABLE DEVELOPMENT - *Morales Gabriela,*
- ID: 1022 - Nature as Researcher and a Different Approach to Research Review: Living Systems Leading Ethics for Educational Research and Sustainability - *Marna Hawk, US*

Global and Cultural Diversity

GCD-B: Panel on Business and EE

Format: Paper Session

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 121

- ID: 652 - Educational partnership for regional sustainability - *Irit Lador, IL*

GCD-D: Panel on Mass Forms of Environmental Education

Format: Paper Session

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 121

- ID: 231 - Teaching about sustainability in Chinese Higher Education: Obedient autonomy and second-best solutions - *Debby Cotton, GB*
- ID: 425 - The Global Environmental Education Partnership: Building a diverse network to improve environmental education practice - *Judy Braus & Ginger Potter, US*
- ID: 778 - Education for Sustainable Development in Brazil - *Rosely Imbernon, BR*

GCD-F: Global and Cultural Diversity Roundtable I

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 121

- ID: 75 - The role of culture in Indonesian EE - *Kelsie Prabawa-Sear, AU*
- ID: 91 - THINK GLOBALLY AND ACT LOCALLY: RETHINKING RELEVANCE IN THE PURSUIT OF SUSTAINABILITY OF OUR GLOBAL ENVIRONMENT - *Samuel Chisa Dike, NG*
- ID: 249 - Environmental Education in Culture Diversity in Indonesia - *Ida Darmapatni, ID*
- ID: 345 - Decarbonize 2017: A Global Mobilization of Youth around Climate Change - *Terry Godwaldt, CA*
- ID: 533 - Taiwan Australian Environmental Education Partnership - *David Kopelke, AU*
- ID: 632 - Del campo a la ciudad: construir una nueva globalidad a partir de nuestra diversidad cultural. Experiencia en la formacion de educadores ambientales. - *Nancy Benitez Esquivel, MX*

GCD-H: Global and Cultural Diversity Roundtable II

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 121

- ID: 667 - Different social (group) with different learning: Comparing characteristics and strategies of social learning between urban and rural NGO in eastern Taiwan - *Mengyuan Jen,*
- ID: 358 - Environmental Identity: considering comparative social contexts - *Sarah Stapleton, US*
- ID: 513 - Diversifying Environmental Education Practice and Research: Exploring Alternatives Within the Cultural and Social Contexts of Asia - *Sachi Ninomiya-Lim, JP*

GCD-K: Global and Cultural Diversity Interactive Poster Session

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 121

- ID: 153 - Go! Global - *Giovanni Fonseca Fonseca, MX*
- ID: 186 - Formacion inicial de profesores en ciencias: Relaciones entre conocimiento y discurso en Educacion Ambiental. - *Maria Mejia-Caceres, BR*
- ID: 754 - The effect of cultural differences on students' initiatives and contributions: A study of multicultural teams - *Calin Gurau, FR*
- ID: 760 - ENVIRONMENTAL PERCEPTION AND ECOLOGICAL CONCEPTS BY HIGH SCHOOL STUDENTS: STUDY-CASE IN SARZEDO CITY, SOUTHEASTERN BRAZIL - *Rosangela Borem, BR*
- ID: 786 - The influence of leadership workplace as a practical educational environment on improving culture diversity awareness for students - *Mohammed Alkhawlani, MY*
- ID: 874 - What makes your society (un)sustainable? Localized Understandings on Sustainability - *TAEYUN KIM, KR*

Indigenous Environmental Education

IEE-B: Engaging Diverse Communities in Indigenous EE

Format: Roundtables

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 120

- ID: 141 - The case for environmental refugee inclusion in environmental education - *Nicholas Stanger, US*
- ID: 335 - Challenges and opportunities of an indigenous- non-indigenous environmental partnership - *Chris North, NZ*
- ID: 181 - Engaging Indigenous Environmental Issues: A Curriculum Review - *Gregory Lowan-Trudeau & Teresa Fowler, CA*
- ID: 920 - Perceptions about the relationship between recovery of riparian forests and production of water by traditional communities' residents involved in a Payment for Environmental Services project – *Rosiléia Almeida, BR*
- ID: 1048 - Connecting Science and traditional environmental knowledge (TEK) of the First Peoples of Trinidad and Tobago: the development of a TEK- environmental science unit. - *Rowena Kalloo, TT*
- ID: 1053 - A Pilot Program on Avifauna that brings force to a peculiar perception of birds in French Guiana: An innovative initiative related to culture and environment nexus for some 11-15 years old students. - *Judith Priam, PR*

IEE-F: Indigenous Perspectives from Africa I

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 120

- ID: 869 - ASSESSING THE ROLE OF CULTURAL ACTIVITIES IN BIODIVERSITY CONSERVATION AMONG THE TUGEN - LEMBUS COMMUNITY IN BARINGO, KENYA - *REBECCA SIRUCHA, KE*
- ID: 957 - The sacred sites of Dan people in Cote d'Ivoire: factors of environment conservation - *Dien Olivier,*

IEE-H: Diversity of Voices in Indigenous EE I

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 120

- ID: 102 - The Role of Indigenous Knowledge in Sustainable Living in the North Rupununi in Guyana - *Paulette Bynoe, GY*
- ID: 226 - Interconnected understandings: Exploring Indigenous children's social construction of nature in Latin America. - *Monica Yadeun de Antunano, MX*
- ID: 237 - Weaving Traditional Ecological Knowledge into Indigenous Youth Education: A Case Study in Eastern Rural Taiwan - *Kuang-Chung Lee, TW*
- ID: 192 - Aboriginal Community Engagement in Primary School Environmental Education: Promoting Learning about Sustainability through a Cross-Cultural Lens - *Judith Wilks, AU*

IEE-J: Diversity of Voices in Indigenous EE II

Format: Interactive Posters
Date: Wednesday, September 13, 2017
Time: 10:30 - 12:00
Room: West Meeting Room 120

- ID: 580 - Re-discovery of Kiganda Indigenous Plants - *Kevina Kezabu, AU*
- ID: 412 - Environmental Culture: Beginning and End of Environmental Education in Mexican Agroecological Learning Communities - *MARIA VIRGINIA GONZALEZ-SANTIAGO, MX*
- ID: 777 - The impact of EE in sustainable development projects in indigenous communities in Mexico - *Monserrat Gonzalez, MX*

IEE-K: Theoretical Issues in Indigenous EE

Format: Interactive Posters
Date: Wednesday, September 13, 2017
Time: 13:00 - 14:30
Room: West Meeting Room 120

- ID: 291 - Confronting Multiple Realities: What Ethnic Children Perceive in Learning Their Own Cultures? - *Tassanee Ounvichit, TH*
- ID: 357 - Indigeneity, Aboriginality and Authochthony - *Chris Beeman, CA*
- ID: 374 - Garden As Co-Teacher: Incorporating Indigenous systems of knowledge and knowing - *Shirley Turner, CA*
- ID: 610 - The environmental education discourse: under-appraisal of the ingenuousness - *Pallavi Singh, GB*
- ID: 625 - ACTIONS FOR ENVIRONMENTAL EDUCATION ON INDIGENOUS LANDS - *Monica Mesquita, PT*
- ID: 826 - Relations of societies with their territories - *Kamal Boushaba, MA*

Nature as Teacher / Researcher

NTR-B: Teacher Training Research

Format: Novel Format

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 114

- ID: 375 - Talking to Trees: Epistemic Navigation in Ecological Systems Education - *Megan McGinty, US*
- ID: 582 - Culture, environment and sustainability in higher education: are we preparing the future teachers to lead with a world in transformation? - *Denise Bacci, BR*

NTR-C: The Body and the Brain

Format: Novel Format

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 114

- ID: 356 - Wilderness Immersion Tuning, Part 2 - *Chris Beeman, CA*
- ID: 944 - Embodied Ethics and the Urban Environmental Imaginary - *Oonagh Butterfield, CA*

NTR-D: Outdoor Classrooms - Research and Results

Format: Novel Format

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 114

- ID: 373 - The Amazon as Teacher - *Lee Beavington, CA*
- ID: 1004 - How peer interactions change through nature experiences: A case of an inclusive class in Korean primary school - *Chankook KIM, KR*
- ID: 504 - The Ecological Self(ie): Rethinking Relationships within Environmental Education - *Polly Knowlton Cockett, CA*

NTR-E: Blurring the Lines - EE Research and Communities of Practice

Format: Novel Format

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 114

- ID: 155 - Wild Pedagogies: A Scholastic Experiment in Re-Wilding Research - *Michael Sitka-Sage, CA*
- ID: 686 - Blurring the Nature/Culture Divide Through 'Deep Connectivity' - *Lee Beavington, CA*
- ID: 925 - Dynamic Emergence of Kinship in a Global Sanctuary Community of Practice - *Joy O'Neil, US*

NTR-F: Possibilities in Programming - Designers and their Programs

Format: Novel Format

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 114

- ID: 870 - Feeling for Compassion: Visceral Sensing Nature-Culture Justice - *Joy O'Neil, US*

NTR-G1: Community Engagement Roundtables

Format: Roundtables

Date: Monday, September 11, 2017

Time: 10:00 - 11:00

Room: Stanley Park Ecology Society (610 Pipeline Rd, 2nd floor)

- ID: 352 - A Scientific Tool for Multi-Level Environmental Education in the Peruvian Amazon - *Carmen Chavez, US*
- ID: 861 - Environmental learning on the fly - *Philip Mullins, CA*
- ID: 864 - The influence Out of Water Diving exhibition has on students' conception about marine environment. - *Naomi Towata, BR*

NTR-G2: Technology and EE: Across the Spectrum

Format: Paper Session

Date: Monday, September 11, 2017

Time: 11:00 - 12:00

Room: Stanley Park Ecology Society (610 Pipeline Rd, 2nd floor)

- ID: 792 - Discovering Nature in the Technological aGE - *Dylan Leech, CA*

NTR-H: Teaching as If Place Has Something to Say

Format: Novel Format

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 114

- ID: 355 - Approaching Autochthonous being through the art of Andy Goldsworthy – *Chris Beeman,*
- ID: 485 - Natural World as Co-Teacher - *Laura Piersol, Michael Sitka-Sage and Sean Blenkinsop, CA*
- ID: 810 - If whales are cultural beings and trees can talk, how can we teach our students to listen to what they say? - *Elin Kelsey, CA*

NTR-J: Educating in Non-Traditional Places

Format: Novel Format

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 114

- ID: 324 - Cultivating Slow Knowledge at the Garden: Children's Voices about Learning to be With the More-than-Human World - *Tathali Urueta-Ortiz,*
- ID: 781 - Animal Assisted Learning Comes to Simon Fraser University - *Carolyn Mamchur, CA*
- ID: 827 - Education projects for teenagers to call them to act for nature. A partnership between a zoo (PNV) and a charity organization (GTT) - *Katia Dell'Aira, IT*

NTR-K: Engaging Nature in Research Methods

Format: Novel Format

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 114

- ID: 991 - Re-framing Adventure Education in the Anthropocene: A topographic ethnography of the embodiment of place and adventure in the Himalaya - *Mary Jackson, US*

- ID: 1029 - Gaian Methodologies: Meta Methodology of Nature as Researcher and Nature as Teacher - *Marna Hawk, US*
- ID: 1034 - Onward and Inward: Cycling Solo Across a Continent to Connect with Nature and Self - *Haley Guest, CA*

Perspectives, Challenges and Innovations in Research

PCI-A: Research Paper Session I

Format: Paper Session

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 110

- ID: 121 - A system-change model for embedding sustainability education within teacher education in Australia: Principles, implementation and benefits - *Jo-Anne Ferreira, AU*
- ID: 550 - Children, Adults and Classes in Turkey are becoming playmates with nature via My Nature Friend's Box game - *Burcu Arik Akyuz, TR*
- ID: 590 - The leadership challenge of a 'competency-based approach to' Sustainability Education in HE - *Paul Warwick, GB*
- ID: 311 - Systematic review of environmental education in Latin America and the Caribbean - *Lilly Briggs, US*

PCI-B: Research Poster Session I

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 110

- ID: 1047 - The University role for the Environmental Education. Politecnico di Torino, experience, results and opportunities. - *Elena Comino, IT*
- ID: 866 - INCORPORATION OF SUSTAINABILITY IN THE SOCIAL REPRESENTATION OF THE DEVELOPMENT IN STUDENTS OF A MEXICAN PUBLIC UNIVERSITY - *Antonio Fernandez Crispin, MX*
- ID: 205 - Higher Education Institutions key players for sustainable development: an example postgraduate course Energy Efficiency Services a catalyst for energy transition in public, industrial and private buildings" - *Dirk Franco, BE*
- ID: 563 - Theory and practice in a new environmental education to study on the connectivity of Hills, Humans and Oceans: A case study of Kyoto University, Japan - *Miki Miyaguchi, JP*
- ID: 878 - Design education for sustainable product innovation. - *Chiara Silvestri, IT*
- ID: 519 - Condiciones de efectuacion de la Educacion Ambiental en egresados de dos posgrados de la Ciudad de Mexico - *Oswaldo Escobar Uribe, MX*

PCI-C: Research Poster Session II

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 110

- ID: 212 - #OrganicLearning - *Giovanni Fonseca Fonseca, MX*
- ID: 415 - OCEAN LITERACY OBSERVATORY. When the academy is all of us - *Monica Mesquita, PT*
- ID: 508 - An integrated discipline approach to Peace through Agriculture - *Rodney Rylander, BZ*
- ID: 707 - Creating assessments and authentic learning experiences in informal environmental education programs with achievement systems: Using the creation of criteria for digital badges for program design - *Theresa Horstman, US*

PCI-D: Research Round Table I

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 110

- ID: 462 - Developing our young leaders for sustainability: a developmental framework for adolescent leaders for sustainability - *Patricia Armstrong, AU*
- ID: 587 - Envisioning Futures for Environmental and Sustainability Education - *Peter Corcoran, US*
- ID: 607 - Transforming values, ideals and paradoxes to education for sustainability - *Marianne Heggen, NO*
- ID: 899 - ANALYSIS OF IBERO-AMERICAN RESEARCH IN ENVIRONMENTAL EDUCATION FROM A DATABASE CATEGORIZATION PERSPECTIVE - *Edna Gamboa Porras,*
- ID: 993 - Process and Emergence: New Materialist Research Methodologies for Sustainability Education - *Mary Jackson, US*
- ID: 264 - Towards the Robust Assessment of Learning Outcomes in ESD - *Aaron Redman, DE*
- ID: 377 - Fixing the atmosphere: A collaborative experiential learning pilot project involving bio-fuel researchers and elementary school students - *Bonnie Shapiro, CA*

PCI-E: Research Round Table II

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 110

- ID: 277 - Maryse Clary : L'alliance pour une education a la citoyennete planetaire : mettre les jeunes au coeur du systeme educatif - *Sylvie Kergreis, FR*
- ID: 708 - Separating the inseparable - A seven-scalar laminated system perspective to environmental and sustainability education - *Adesuwa Agbedahin, ZA*
- ID: 322 - Evaluation of the preparedness of preservice teachers to teach environmental and sustainability education (ESE): Challenges and Implications for ESE research - *Oluwaseun Bandele, NZ*
- ID: 189 - Una revision de articulos de Educacion Ambiental en el periodo 2005-2015: Identificando conocimientos y escenarios - *Maria Mejia-Caceres, BR*
- ID: 994 - The Uptake of Sustainability in Education: An Analysis of the Relationships between Policy and Practice - *Marcia McKenzie, CA*
- ID: 471 - Sustainability Governance at Universities: Insights from a Qualitative Research Project in Germany - *Marco Rieckmann, DE*
- ID: 16 - Deepening Approaches to Teaching, Learning and Curriculum in Environmental and Sustainability Education - *Alan Reid, AU*
- ID: 84 - Education relative a l'environnement et alphabetisation a l'age adulte. Proposition d'un modele theorique. - *Carine Villemagne, CA*

PCI-F1: Research Paper Session II

Format: Paper Session

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 109

- ID: 646 - eeWORKS: demonstrating the impact of environmental education through empirical research - *Judy Braus & Nicole Ardoin, US*

PCI-F2: Research Round Table III

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 110

- ID: 706 - Youth co-design in an informal environmental education program - *Theresa Horstman, US*
- ID: 467 - Dark Pedagogy - *Stefan Bengtsson, SE*
- ID: 251 - Teaching about Sustainability: Describing Early Career Teachers' Classroom Practices - *Eileen Merritt, US*
- ID: 755 - STATE OF ART AND CONTRIBUTION OF GEOSCIENCES FOR ENVIRONMENTAL EDUCATION - *Denise Bacci, BR*
- ID: 992 - Environmental Education: the Major Work of Ensuring Quality and Outcomes in Connecting Environment and Education - *Alan Reid, AU*
- ID: 996 - Influences on the Development and Mobilization of Sustainability in Education Policy - *Marcia McKenzie, CA*
- ID: 558 - Exploring student perspectives of learning for sustainability, and experiences of sustainability cultures on campus - *Rachel Drayson, GB*

PCI-C1: Research Symposium I

Format: Paper Session

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 113

- ID: 362 - Measurement, Evaluation, and Research of Education and the Sustainable Development Goals - *Marcia McKenzie, CA*

PCI-C2: Research Symposium II

Format: Paper Session

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 121

- ID: 997 - Climate change education: International commitments, national strategies, and the role of research - *Marcia McKenzie, CA*

PCI-G1: Research Symposium II

Format: Paper Session

Date: Monday, September 11, 2017

Time: 10:00 - 16:00

Room: Morris J Wosk Centre for Dialogue (580 W Hastings St, Vancouver)

- <http://weec2017.eco-learning.org/wp-content/uploads/2017/03/Research-Symposium.pdf>

PCI-G2: Research Symposium III

Format: Paper Session

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 116

- ID: 639 - Repères contemporains pour une éducation relative à l'écocitoyenneté - *Lucie Sauvé, CA*

PCI-H: Research Round Table IV

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 110

- ID: 463 - The emergence of adolescent leaders for sustainability - *Patricia Armstrong, AU*
- ID: 557 - THE ETHNOMATHEMATICS POSTURE IN ENVIRONMENTAL RESEARCH PROCESSES. communitarian sustainable development in act - *Monica Mesquita,*
- ID: 663 - Citizen sciences as reflexive, contextual social movements - *Priya Vallabh, ZA*
- ID: 802 - RESEARCH IN ENVIRONMENTAL EDUCATION FROM THE QUALITY PERSPECTIVE OF PUBLICATIONS IN IBEROAMERICA - *Héctor Beltran Gutierrez, CO*
- ID: 661 - Environmental Education as a Catalyst for Curricular Integration - *Constantinos Yanniris, GR*
- ID: 1041 - Challenges for Environmental Education to promote interdisciplinary research and scientific production at times of subordination - *Dulce Pereira, BR*
- ID: 305 - Holistic and Transformative Learning towards a Sustainable Life: how can be the Spanish Public Universities inspired for the case of the Schumacher College - *Leslie Mahe Collazo Exposito, ES*
- ID: 197 - Systems Thinking and Transformative Environmental/Global Education: The Justification of Boundary Judgements - *J. Melanie Young, CA*
- ID: 628 - Mise en oeuvre et analyse critique de projets transdisciplinaires en education relative a l'environnement et alphabetisation a l'age adulte. - *Carine Villemagne, CA*

PCI-J: Research Round Table V

Format: Roundtables

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 110

- ID: 559 - THE SUSTAINABILITY OF HUMAN INTELLIGIBILITY. Researching to "unhierarchize" the environmental educational processes - *Monica Mesquita, PT*
- ID: 988 - A Comparative Case Study Approach to Researching Environmental and Sustainability Education - *Marcia McKenzie,*
- ID: 372 - Efforts to establish 'Evaluation of Environmental Education Program' as an academic discipline in Japan - *Ryo Sakurai, JP*
- ID: 245 - Multi-Stakeholder collaboration for sustainability education: The evaluation and assessment of Regional Centers of Expertise on Education for Sustainable Development. - *Junior Ramsoram, CA*
- ID: 206 - Sustainable Education: An essential contribution in the quadruple helix interaction towards a sustainable paradigm shift. - *Dirk Franco, BE*
- ID: 217 - Entre Natures et Cultures, Individus et Societes, construire collectivement la Citoyennete Planetaire - *Sylvie Kergreis, FR*
- ID: 990 - Towards an ABC of what matters in research about climate change education - *Alan Reid, CA*

PCI-K: Research Symposium IV

Format: Paper Session

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 110

- ID: 690 - Wild Pedagogies: Reflections on Writing a Manifesto at/with Sea - *Michael Sitka-Sage, CA*

Place-based Education and Outdoor Learning

PBO-B: Engaging Middle / Secondary School Students in Place-Based Learning

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 118

- ID: 805 - Environmental Education as a Management Tool to Minimize Human-Macaque Conflicts in Shoushan National Nature Park, Taiwan - *Yun-Hsuan Chiu, TW*
- ID: 863 - Environmental Perception of students from Ubatuba (Brazil) about marine and coastal ecosystems measuring by a research instrument based on Wiseman and Bogner's Model of Ecological Values - *Naomi Towata, BR*

PBO-C: Teacher and University Students Involved in Place-Based Learning

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 118

- ID: 108 - Finding your place in Place-based education: Strategies from the Place Learning and Civic Engagement Program - *Kate Welsh, US*
- ID: 134 - Curriculum innovation for sustainability in higher education: the University of Bristol's Green Apple Scheme - *Aisling Tierney, GB*
- ID: 276 - Community field trip learning and the development of undergraduate students' responsible action toward ocean stewardship - *Chi-I LIN, TW*
- ID: 501 - Pre-service teachers' difficulties in planning and applying the Field Study strategy. - *Naomi Towata, BR*
- ID: 507 - Indigenizing Experiential Learning through Transformative Third Space: A Case Study of the University of Winnipeg - *Natalie Bartmes, CA*
- ID: 517 - University Education for Sustainability and Resilience Through the Linking of Local and Global Contexts - *Sachi Ninomiya-Lim, JP*
- ID: 678 - An Evaluation of the Impacts of the Teton Science Schools Place-Based Education Professional Development Workshops for Teachers in Bhutan - *Leslie Cook, US*
- ID: 981 - How Do We Train Our Graduates Ready for Transdisciplinary Projects? - A Case Study of Fieldwork-based Education in Sustainability Science Program - *Shogo Kudo, JP*
- ID: 1003 - Contribution of field work to student learning: A Case Study of the Environmental Studies and Geography programmes, University of Guyana - *Denise Simmons, GY*
- ID: 586 - Students as catalysts of change- the call for and challenges of service learning within a sustainable ocean city initiative - *Paul Warwick, GB & Alun Morgan, GB*

PBO-D: Connecting Elementary Students with Nature I

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 118

- ID: 19 - The Development of Chinese Nature Schools (ziran xuexiao) - *Rob Efrid, US*
- ID: 122 - Connecting classroom with community: the effects of community forest trip on student's learning achievements and motivation - *Surin Onprom, TH*
- ID: 200 - Measurement of Educational Effect by using Text Mining Technique - *AKIHIRO IJIMA, JP*

- ID: 213 - The Sense of Place of Internationally-Mobile Adolescents - *Sarah Urquhart, JP*
- ID: 235 - Saving our children from the Nature Deficit Disorder through Place-based education - *Krystle Ontong K, ZA*
- ID: 307 - Exploring the influences of outdoor learning on students' learning attention and pressure by using neuroscience technology - *Yi-Hsuan Hsu, TW*
- ID: 327 - Cross-curricular connections: Envisioning embodied outdoor learning in primary school - *Son Truong, AU*
- ID: 353 - Growing Green Hearts and Minds at NEST, a Nature-based Public School - *Laura Piersol, Linda Russell and Jenny Groves, CA*
- ID: 428 - The ACEER Foundation's Conservation Learning Web in the Peruvian Amazon - *Paul Morgan, US*

PBO-E: Connecting Elementary Students with Nature II

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 118

- ID: 453 - Green Curtain Projects as Placed-Based Education for Sustainable Development - *Ikko Tucker, AE*
- ID: 476 - Outdoor education in Slovenian school system support cultural and environmental education - *Darja Skribe Dimec, SI*
- ID: 541 - Forest Jump: Schoolchildren leading design for school ground greening - *Susan Wake, NZ*
- ID: 547 - Children, Adults and Classes in Turkey are becoming playmates with nature via My Nature Friend's Box game - *Burcu Arik Akyuz, TR*
- ID: 567 - Project Emc2 - Exploring white crowberry coastal habitats - *Corema album (L.) D. Don* - an environmental outdoor education project as a lever for cultural initiatives - *M. Alexandra Lima, PT*
- ID: 569 - OUT OF BOX - environmental outdoor education in Finland - *Anna Kettunen, FI*
- ID: 853 - Place-based Education for Sustainability and Local Outdoor Learning Within the Schools Curriculum - *Allain Chimanikire, ZW*
- ID: 1019 - Permaculture Ethics and Principles: Curriculum Design Framework for People and Planet - *Shelley Serebrin, CA*

PBO-G: Using Technology to Engage Students and Teachers in Place-Based Learning

Format: Paper Session

Date: Monday, September 11, 2017

Time: 10:00 - 14:00

Room: Science World British Columbia (1455 Quebec Street, Vancouver, BC V6A 3Z7)

- [From Rising Tide to Tsunami: Scaling Environmental Education and the New Nature Movement](#) - *Scott Sampson, PhD, CEO & President, Science World British Columbia*
- Q&A with Scott Sampson
- ID: 435 - Where STEM binds, and ST(eee)EM flows: A case for where in STEM discourse and practice - *Hartley Banack, CA*
- ID: 487 - Using Digital Tools to Engage Teachers & Students in Climate Change Education - *Stephen Sheppard, CA*
- ID: 767 - Using on-line virtual reality and community based learning as a vehicle for sustainability and climate education - *Frank Granshaw, US*
- Lunch is served / Science World Galleries open for delegates
- Science World exploration with focus on Ken Spencer Science Park (<https://www.scienceworld.ca/sciencepark>) and Search: Sara Stern Gallery (<https://www.scienceworld.ca/searchgallery>)

PBO-H: Community Involvement in Place-Based Learning

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 118

- ID: 42 - Living Wild - *Daniella Roze des Ordon, CA*
- ID: 304 - Children's access to gardens in Norway, India and the United Kingdom - *Barbara Maria Sageidet, NO*
- ID: 398 - Exploring processes of informal learning concerning biodiversity among local users of natural resources in Sweden - *Diana Garavito-Bermudez, SE*
- ID: 450 - Significados y conexiones de estudiantes de educacion primaria con los lugares habitados - *Karina De Alba Villaseñor, MX*
- ID: 511 - Exploring the Potential for Place-based Climate Change Engagement in New Zealand National Parks - *Karen Hytten, NZ*
- ID: 524 - Social-Ecological Dynamics and Local Knowledge on Islands: A Case Study of Dongjiyu in Taiwan - *WEICHIEH LIN,*
- ID: 573 - A model of immersive environmental education: The Lost Valley Education and Events Center in Dexter, Oregon - *Calin Gurau, FR*
- ID: 820 - Reef Education to Sea Country connections: Innovation of co- learning for a sustainable future. A success story for tourism and environmental education on the Great Barrier Reef. - *Marie Taylor, AU*
- ID: 1052 - THE LAGOON THAT UNITES US ALL - *Liliana Pulido, MX*
- ID: 70 - Effectiveness of a Marine Education Program on Junior High School Students with a Specific Focus on Satoumi: a case study of a sustainable coastal community development in Japan - *Ryo Sakurai, JP*

PBO-J: Exploring Ecological Pedagogy and Place-Based Learning

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 118

- ID: 85 - Exploring Tools of Imaginative Ecological Education - *Gillian Judson, CA*
- ID: 182 - Stories of advocacy in place-responsive pedagogy - *Peter Renshaw, AU*
- ID: 225 - PEDAGOGY + PLACE + PEOPLE Critical reflections on an interdisciplinary Amazon field school experience through a Lefebvrian lens. - *Lucie Gagne, CA*
- ID: 244 - Hogar, escuela y espacios de recreacion: El sentido de lugar en juvenes universitarios - *Yolanda Feria-Cuevas, MX*
- ID: 328 - El trabajo de campo como complemento de la educacion ambiental con ninos, en un campamento de proteccion de tortugas marinas en Mexico - *Blanca BOJORQUEZ MARTINEZ, MX*
- ID: 351 - Emociones e interacciones que caracterizan el sentido de lugar en juvenes universitarios - *Yolanda Feria-Cuevas, MX*
- ID: 616 - Educacion Ambiental para la Paz - *Sindy Leon, CO*
- ID: 938 - The Ability of Nature to Foster Growth - *Maddie Dineen, US*

Policy and EE

POL-B: EE/Teacher Education (Institutional Policies) & Post-Secondary Education

Format: Roundtables

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 122

- ID: 114 - Environmental and Sustainability Teacher Preparation: A Global Perspective - *Maurice DiGiuseppe, CA*
- ID: 50 - Environmental and Sustainability Education in Canadian Teacher Education: National Agency and Activism - *Maurice DiGiuseppe, CA*
- ID: 387 - Bridging relationships between university and educational settings by supporting Environmental Education for Sustainability (EEfS) implementation - *Sylvia Almeida, AU*
- ID: 561 - Responsible Futures: embedding ESD throughout the culture of universities and colleges - *Quinn Runkle, GB*
- ID: 850 - The Community Sustainability Incubator: A New Model for University-Community Collaboration and Resilience Building - *Harold Glasser, US*
- ID: 552 - Proposing a Global SDG Charter for Universities, Colleges and Students - *Iain Patton, GB*

POL-C : Community Development / Implementation of ESD (Training Programs)

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 122

- ID: 43 - Environmental Education of Rural Farmers in East Africa and Its Implications for Sustainable Development. A Case of Uganda - *Gerald Ssengendo, UG*
- ID: 125 - Study on the Cases of China-Africa Environmental Education and Technical Collaboration - *Fengting Li, CN*
- ID: 482 - Pit Latrine Harmful Effects on Groundwater and Water Source Quality in Rural Villages: Awareness and Education Combined with Action to Minimize the Impact - *Stanis Koko, CD*
- ID: 729 - Environmental education for sustainable societies - The Ecosystem Services and Environmental Services of the Water Producer Program (PSA) in the city of Salesopolis, Sao Paulo, Brazil - *Rosely Imbernon, BR*

POL-E: Policy and K-12 Initiatives in EE/ESD (Environmental Action & School Programs)

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 122

- ID: 252 - ESD Policy and Implementation: Practices that Work - *Melanie Parker, US*
- ID: 555 - Nationwide LYKE-network promoting local environmental education in Finland (poster) - *Niina Mykrä, FI*
- ID: 774 - Impacts of the Environmental Education Policy Framework in Ontario: Connecting to EcoSchools - *Elanor Waslander, CA*
- ID: 799 - Why and How PISA Distorts Environmental and Social Goals - *Alberto Arenas, US*
- ID: 823 - Redefining EE in urban setups in the UAE - *AJITA NAYAR, AE*

POL-F: Adaptation to Climate Change - Global, National and Local Policy Development

Format: Interactive Posters
Date: Tuesday, September 12, 2017
Time: 08:30 - 10:00
Room: West Meeting Room 122

- ID: 143 - TRANSFORMING SARIAYA, QUEZON, PHILIPPINES INTO A CLIMATE-SMART ECO-TOWN - *Ronnie Lindog, PH*
- ID: 420 - The role of open distance education and e-learning in developing climate literacy in South Africa - *Muchaiteyi Togo, ZA*
- ID: 649 - Inspiring Climate Change Action Through Community Dialogue - Novel Format - *Maria Loffredo Roca, US*

POL-H: Public Education and Policy Implementation; Public Policy and EE

Format: Interactive Posters
Date: Tuesday, September 12, 2017
Time: 13:00 - 14:30
Room: West Meeting Room 122

- ID: 406 - Politica Global y Educacion Ambiental - *Rafael Ramirez Beltran, MX*
- ID: 592 - Enhancing achievement of SDGs through environmental sustainability practices in public sector in Kenya - *Ayub Ndaruga, KE*
- ID: 685 - La politica nacional de Educacion Ambiental en Colombia: resultado de un proceso formativo - investigativo, para su apropiacion e institucionalizacion en el ambito local - *Maritza Torres Carrasco, CO*
- ID: 815 - EA Program of a provincial government with national projection - *Claudia Terenghi,*
- ID: 917 - EE, ESD, and SDGs in Japan - *Kumi TASHIRO, JP*
- ID: 1042 - The environmental education center systems in Taiwan and Korea and perceived roles of national - regional - local centers - *Chankook KIM, KR*

POL-J: International Policy Initiatives in Sustainability and EE

Format: Roundtables
Date: Wednesday, September 13, 2017
Time: 10:30 - 12:00
Room: West Meeting Room 122

- ID: 410 - Review of the Unit-Based Sustainability Assessment Tool for alignment with GAP priorities and Sustainable Development Goals - *Geraldine Kumalo and Muchaiteyi Togo, ZA*
- ID: 844 - Youth Engagement in Environmental Education - *Brian Waswala, KE*
- ID: 1010 - The Promise of Benchmarks and the SDGs for a Sustainable Future - *Kim Smith & Heather Spalding, US*
- ID: 645 - A comparative analysis of EE Acts: Lessons learned and policy implications for the future - *Judy Braus & Ginger Potter, US*

Social Responsibility and Agency / Activism

SRA-G: Community Engagement Workshop

Format: Paper Session

Date: Monday, September 11, 2017

Time: 15:00 - 16:00

Room: Unitarian Church of Vancouver (949 49 AVE W, Vancouver, BC V5Z 2T1)

- ID: 942 - Inward Bound: How the Fields of Peacemaking, Social and Emotional Learning and Educating for Social Responsibility Can Impact EE Pedagogy in Outdoor Expeditionary Settings - *Laura Parker Roerden, US*
- ID: 782 - Developing Awareness: Exploring the Use of Interiority Work to Increase Propensity for Environmental Stewardship - *Cheryl Re, CA*
- ID: 556 - People and pest animals: Role of identity and feelings - *Sally Birdsall, NZ*
- ID: 76 - Environmental child soldiers of Surabaya, Indonesia - *Kelsie Prabawa-Sear, AU*

SRA-A: The Facets of Environmental Education

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 117

- ID: 365 - Environmental Education as an Intervention for Systems Change - *Maureen Jack-LaCroix, CA*
- ID: 331 - Social Responsibility and Activism: A School-Based Approach For A Sustainable Society Through 'Human Revolution' - *YOSHIYUKI IIO, JP*
- ID: 253 - Transformative Learning, Systems Thinking and Behavior Change: NWEI's Pedagogy for Sustainability - *Lacy Cagle, US*
- ID: 423 - Societal responsibility of universities: A structuring and global vision of the Cadi Ayyad University for promoting sustainable educational practices - *FATIMA ARIB, MA*

SRA-B: Environmental Education - Pedagogies and Practices

Format: Interactive Posters

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 117

- ID: 922 - Engaging Environment and Culture in Building teachers as agents of change in South Africa - *Esther Kibuka-Sebitosi, ZA*
- ID: 816 - Teaching ethics in science education: beyond anthropocentrism in theory and practice - *Ana Paula Guimaraes, BR*
- ID: 812 - Developing Social Responsibility and Citizenship Through Place-based and Experiential Education - *Kevin O'Connor & Robert Sharp, CA*
- ID: 577 - Towards transdisciplinarity, originating from the subject - How do social subject teachers implement environmental education? - *Essi Aarnio-Linnanvuori, FI*

SRA-C: Eco-Education - Design and Practice

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 117

- ID: 895 - Sustainable schools: limits, possibilities and challenges of appropriation of a public politics by Brazilian schools - *Rosiléia Almeida, BR*
- ID: 821 - Measurement Matters: development of a sustainability locus of control scale for use with adolescents - *Misol Kim, AU*
- ID: 191 - Indigenous Environmental Issues, Activism, and Education: Implications for Practice - *Gregory Lowan-Trudeau,*
- ID: 543 - The incidence of transformative learning for sustainability in higher education: influences of specialist sustainability units in an Australian context - *Elizabeth Sidiropoulos, AU*
- ID: 422 - Social Practices at Cadi Ayyad University: an innovative approach based on education for sustainable development of students - *FATIMA ARIB, MA*

SRA-D: Teaching Climate Change

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 117

- ID: 29 - 360 degrees of change: 360 tonnes of greenhouse gas emissions reduction in a school setting - *Elaine Lewis, AU*
- ID: 135 - Promoting climate action - what works - *Robert Gifford, CA*
- ID: 797 - Empowerment and agency for a transformative climate education - *Emilie Morin, CA*
- ID: 680 - Teaching about Climate Change: Tools for Inspiring Action - *Patrick Robertson, CA*
- ID: 446 - Education in Social Action within the Climate Justice Movement: A Framework for Understanding Learning within North American Fossil Fuel Protests - *Jenalee Kluttz, CA*

SRA-E: Educator and Pedagogy Transformation

Format: Interactive Posters

Date: Sunday, September 10, 2017

Time: 17:00 - 18:30

Room: West Meeting Room 117

- ID: 750 - How the class actively helped to protect a biodiversity hotspot with TiME - *Uri Shanas, IL*
- ID: 849 - Catch: A Face-to-Face Dynamic Simulation Game for Teaching About Renewable Natural Resource Management and Sustainability - *Harold Glasser,*
- ID: 478 - Raising awareness of sustainability competences through playing a simulation game, Fishbanks Ltd. - *Jen-shiuan (Susan) Shiau, TW*
- ID: 609 - CONSERVATION EDUCATION AS ENVIRONMENTAL EDUCATION: A CASE STUDY OF A COMMUNITY-BASED NON-GOVERNMENTAL ORGANISATION IN TRINIDAD AND TOBAGO - *Shahiba Ali, TT*
- ID: 787 - Children's Voices about Energy Conservation and Production - *Eileen Merritt, US*

SRA-F: Global Environmental Education Goals and Monitoring Success

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 117

- ID: 489 - Catalyzing a Research Cluster for Social Mobilization on Climate Change using Digital Tools - *Stephen Sheppard, CA*
- ID: 909 - Youth Action for Environmental Protection - *Elaine Nevin, IE*
- ID: 290 - Benchmarking the Desirable Attributes of Change Agents for Urban Green Lifestyles - *Suthathip Kedkaew and Tassanee Ounvichit, TH*

- ID: 983 - Study Abroad Education as mechanism for achieving the Sustainable Development Goals: Investigating the transformative potential of short-term study abroad experiences - *Siobhan Ashe, CA*

SRA-H: Education and Environmental Economics

Format: Roundtables

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 117

- ID: 908 - Education in the context of degrowth and socio-ecological transformations - Individual learning processes and the nexus of economic growth, culture and education - *Sofia Getzin, CH & Kai Niebert, CH*
- ID: 862 - Greening Making @ UBC Girls' Makeathon - *Paula MacDowell, CA*
- ID: 769 - Teaching Corporate Social Responsibility (CSR): special features and proposals for management education - *Cedrine Joly, FR*
- ID: 105 - Carbon, Climate and Coffee - Building Alliances between Fair Trade, Small-Scale Farmers and Regenerative Organic Agriculture - *Monika Firl, CA*
- ID: 469 - Sustainability-driven entrepreneurship: round table on a new joint master curriculum - *Marco Rieckmann, DE*

SRA-J: Partnerships and Collaboration Roundtable

Format: Roundtables

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 117

- ID: 839 - REAPROVEMENT OF RADIOGRAPHS FOR THE ENVIRONMENT, HEALTH AND CITIZENS' TRAINING - *MARILIA DE OLIVEIRA, BR*
- ID: 803 - Contents of local hydrology in the courses of environmental and watershed training 2013-2014 of the National Network of Environmental Education (RENEA), Uruguay - *Carlos Anido, UY*
- ID: 464 - Eco Champions: an integrated approach to the whole community leadership for sustainability - *Patricia Armstrong, AU*
- ID: 306 - Sustainability in Higher Education Subjects: University-Community Co-Creation Process in the City of Girona - *Leslie Mahe Collazo-Exposito, ES*

SRA-K: Case Studies - Risks, Resources and Response

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 117

- ID: 535 - Content Analysis of Descriptions of Exhibits in Nuclear Disaster Memorial Museums - *Shinobu Goto, JP*
- ID: 1000 - On the technological accident with the Samarco dams in Brazil: Is there future in the mud? dam collapse in Brazil - *Dulce Pereira, BR*
- ID: 564 - Smart garbage collection system - *Ruchi Kumari, IN*
- ID: 833 - Study of the efficiency of Moringa oleifera in the quality of the water to the irrigation in the rural district Sobradinho - City of Uberlandia - MG. - *MARILIA DE OLIVEIRA, BR*
- ID: 283 - Contents of local hydrology in the courses of environmental and watershed training 2013-2014 of the National Network of Environmental Education, Uruguay - *Carlos Anido, UY*
- ID: 496 - UNA PANORAMICA DE LA ACTUAL SITUACION DE EMERGENCIA Y ARTICULACION DEL MOVIMIENTO AGROECOLOGICO EN GALICIA - *Kylyan Bisquert i Pérez, ES*

- ID: 402 - UN ESTUDO COMPARADO DE TRES UNIVERSIDADES EN TRANSICION:
POSIBILIDADES EDUCATIVAS DEL MODELO DE LAS TRANSITION TOWNS EN EL MARCO
UNIVERSITARIO - *Kylyan Bisquert i Pérez, ES*
- ID: 430 - In Case of Emergency Break Glass: Age-old Stories as Guideposts to a Sustainable Future -
Roger Petry, CA

Urban Ecosystems

URB-B: Addressing Urban Planning in the Curriculum

Format: Roundtables

Date: Saturday, September 9, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 112

- ID: 342 - HOW URBAN LAND USE VARIATION INFLUENCE DIVERSITY AND DISTRIBUTION OF BIRD SPECIES IN HARARE ZIMBABWE - *TAFADZWA JAKATA, ZW*
- ID: 451 - Changing catchment practice on an urban river in Sydney - *Sue Burton, AU*
- ID: 771 - GREEN MOBILIZATION IN KULTURPARK - *Mehmet Umut Dilsiz, TR*
- ID: 931 - The Analysis of Key Success Factors of Waste Management for Urban Ecosystem - *Lina Astuti, ID*
- ID: 965 - Public space between relational cartography and new forms of citizenship. - *Maria Montalbano, IT*

URB-C: Formal Programs in Environmental Education

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 112

- ID: 407 - Post-Secondary Environmental Experiential Education: The KPU Urban Ecosystems Degree - *Katherine Dunster, CA*
- ID: 500 - Gigantes invisibles, arboles del centro de Medellin - *Alejandra Leoci Eisses, CO*
- ID: 608 - Environmental education through citizen science: the Limbovane Ant Project - *Dorette Du Plessis, ZA*
- ID: 882 - Sistema digital interactivo para la enseñanza de materias socioambientales en la Facultad de Ciencias, de la Universidad Nacional Autonoma de Mexico - *Lucia Almeida, MX*

URB-D: Project Based Programs in Environmental Education

Format: Roundtables

Date: Sunday, September 10, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 112

- ID: 502 - The Commons as Classroom - *Domenico DAlessandro, US*
- ID: 623 - A Groundbreaking Approach to Graduate-level Programming in Urban Environmental Education - *Annalise Ritter, US*

URB-F: Techniques in Urban Environmental Education

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 112

- ID: 162 - The importance of embedding sustainable Biophilic Design strategies in interior architecture and design education - *Carolyn Hayles, GB*
- ID: 437 - Ecosystemes urbains : le parc bangr-weogo de Ouagadougou, un outil d'education environnementale - *Roger BARO, BF*

- ID: 440 - The city as a system - Streamlining inter-/multi-disciplinarity in urban environmental higher education by subscribing to system theory and thinking - *Johannes Hamhaber, DE*
- ID: 538 - Connecting threads between performance art, urban design and environmental education - *Susan Wake, NZ*
- ID: 670 - The relations of human beings with other beings in a Brazilian educational urban context. - *Andreia Figueiredo, BR*
- ID: 761 - EVALUATION OF THE RECYCLABLE MATERIAL DISPOSAL - *Rosangela Borém, BR*
- ID: 795 - Knowledge and attitudes towards bumblebee-friendly gardening: A survey of Fraser Valley residents and university students - *Mariano Mapili, Lauren Westhaver, Shyanne Batt, Katie Galliazzo, Michelle Riedlinger, and Renee Prasad, CA*

URB-H: Urban Ecosystem Characteristics and Impacts in Environmental Education

Format: Interactive Posters

Date: Tuesday, September 12, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 112

- ID: 8 - Ecological restoration in cities: The challenges of teaching about novel ecosystems and layers landscapes - *Valentin Schaefer, CA*
- ID: 325 - Case studies for maintaining and enhancing urban greenery - *Phuong Nguyen, VN*
- ID: 836 - Environmental shifts and cultural influences in the transition of a wetland ecosystem of the Sumas Lake to the urban ecosystem of the Sumas Prairie - *Mariano Mapili, CA*

URB-K: Teaching About Quality of Life

Format: Interactive Posters

Date: Wednesday, September 13, 2017

Time: 13:00 - 14:30

Room: West Meeting Room 112

- ID: 389 - LA PERCEPCION DEL TRANSPORTE ECOLOGICO COMO ALTERNATIVA AL CAMBIO CLIMATICO EN ESTUDIANTES DE BRASIL, ESPANA, MEXICO Y PORTUGAL - *German Vargas Callejas, ES*
- ID: 491 - EL MODELO DE VIDA URBANO Y SU RELACION CON EL CAMBIO CLIMATICO EN BRASIL, ESPANA. MEXICO Y PORTUGAL - *German Callejas, ES*
- ID: 544 - The Canal Participatory Conservation for Tourism Encouragement of the Waterfront Communities - *Paranee Srisawad, TH*
- ID: 593 - Developpement de l'Agroecologie : espace temoin de changements de mode de consommation vers plus de durabilite en milieu urbain. - *Loubna Chaouni, MA*
- ID: 886 - Valoracion socio-economica de servicios ecosistemicos de regulacion y belleza escenica del pedregal de San Angel, Ciudad de Mexico - *Lucia Almeida, MX*

Additional Novel Formats

ANF-A: Additional Novel Formats

Format: Novel Format

Date: Saturday, September 9, 2017

Time: 11:00 - 12:00

Room: West Meeting Room 114

- ID: 1045 - (In)difference at the Edge: The Warp and Weft of Words and Worlds, Tracing Deep Epistemic Eco-Entanglements of Self and Other Through Métissage - *Hilary Leighton, CA*
- ID: 1056 - Embodying the earth: What homemade cookies and handcrafted pottery can teach us about our relationships with the planet - *Kaeli Benoit, CA*
- ID: 887 - Take away coffee becomes ART TO STAY - *Karola Braun-Wanke, DE*

ANF-F: Additional Novel Formats

Format: Novel Format

Date: Tuesday, September 12, 2017

Time: 08:30 - 10:00

Room: West Meeting Room 116

- ID: 934 - Weaving Conversation Circles for New Understandings - *Sharon Kallis, CA*

ANF-J: Additional Novel Formats

Format: Novel Format

Date: Wednesday, September 13, 2017

Time: 10:30 - 12:00

Room: West Meeting Room 112

- ID: 935 - Drawing meaning from nature: observation, symbols and stories - *Robi Smith & Zuzana Vasko, CA*