

## epiSTEMe 9

Ninth International Conference to Review Research in Science, Technology, Engineering, and Mathematics Education

4 - 8 July, 2022

### Conference Schedule

Time	Day 1: Monday, 4 July 2022
10.00AM-10.30AM	Welcome by Centre Director, HBCSE About epiSTEME 9: Our philosophy Arnab Bhattacharya, Ayush Gupta & Deepa Chari
10.30AM-11.30AM	Plenary talk 1: Sara Tolbert Title: Science education as a social movement Chair: Aswathy Raveendran
11.30AM-11.45AM	Break (15 minutes)
11.45AM- 01.30PM	Oral Presentation Session: Strand 4 Research to practice in disciplinary and interdisciplinary spaces Chair: Anisha Malhotra-Dalvi
11.45AM-12.00NOON	A model for the integration of pedagogic content knowledge in teacher training programmes Serah Suman Potharay & Umakanth Dammalapati
12.00NOON-12.15PM	Enriching micro-teaching skills with tspck framework in pre-service teacher education Narendra Deshmukh & Eunice Nyamupangedengu
12.15PM-12.30PM	Teachers' knowledge of students' thinking inferred from lesson plans in lesson study Shikha Takker, Lisnet Mwadzaangati, Jill Adler & Craig Pournara
12.30PM-12.45PM	Numeric equations: a key step in solving the equation problem Craig Pournara & Shikha Takker
12.45PM-01.00PM	Steam education for school teachers in Nepal Indra Mani Shrestha, Bal Chandra Luitel, Binod Parsad Pant, Niroj Dahal & Netra Kumar Manadhar
01.00PM-01.15PM	Effectiveness of Experiential Learning for the Topic of Length Measurements in Grade 6 Anusha Bhat & Prathik Cherian J
01.15PM-01.30PM	Closing Remarks by Chair
Break (2.30 hours)	
04.15PM-05.40PM	Workshop by Prajval Shastri & Chayanika Shah Title: Intersectionality Moderator: Deepika Bansal
Break (5 minutes)	
05.45PM-06.45PM	Plenary talk 2: Heba El-Deghaidy Title: STE2AM and Social Responsibility in Higher Education Chair: Aniket Sule
06.45PM-06.50PM	Closing Remarks by Chair

Time	Day 2: Tuesday, 5 July 2022
10.00AM-11.40AM	Oral presentation session: Strand 2 Cognitive and affective studies in STEM education Chair:Reema Mani
10.00AM-10.15AM	Cultivating the epistemic climate of large enrollment introductory biology class with the use of the Five Core Concepts of Biology Kyriaki Chatzikyriakidou & Melissa McCartney
10.15AM-10.30AM	The possible missing ingredients in engineering higher education –mastering self, agency to shift disempowering norms and socialization and mastering technical skills Arun Arul Selvam, Sri Bhavani Arul, Narmadha Anandavelu, Santhosh Kathiresan, Sivaraman Ramamoorthy & Sanjeev Ranganathan
10.30AM-10.45AM	Biology Teachers' Planned Pedagogical Content Knowledge in Respiration: A case of a Zambian Secondary School Thumah Mapulanga, Gilbert Nshogoza & Yaw Ameyaw
10.45AM-11.00AM	Exploring status of science education in Indian rural classroom: a study of eastern districts of uttar pradesh Kajal & Sunita Singh
11.00AM-11.15AM	Classroom challenges before schools in the tribal regions Asmita Redij & Aniket Sule
11.15AM-11.30AM	Understanding the process of memetic reasoning in graduate students during Covid-19 – if you know what we meme! Anveshna Srivastava & Chandan Dasgupta
11.30AM-11.40AM	Closing Remarks by Chair
Break (20 minutes)	
12.00NOON-01.00PM	Plenary talk 3: Tan Aik Ling Title: Accessibility of STEM for teachers: What is at stake? Chair:Mashood KK
Break (3 hours)	
04.00PM-05.20PM	Poster presentation session: Strand 3 Pedagogy, Curriculum and local context in STEM education Chair:Anveshna Srivastava
04.00PM-04.10PM	Examining the effects of teachers' self-efficacy in teaching astrophysics using video-based multimedia Gabriel Janvier Tugirinshuti, Leon Rugema Mugabo & Alexis Banuza
04.10PM-04.20PM	Study of damped oscillatory motion of spring-mass system using video analysis technique Rajesh Bm, Shubha S, Avadhani Dn, Satish Bm & Madhura Tk.
04.20PM-04.30PM	Learning With Algodoo: Simulation Building as a Pedagogic Tool Prathik Cherian J
04.30PM-04.40PM	Intergation of steam in chemistry classroom Puneeta Malhotra
04.40PM-04.50PM	Mathematics for All and Everyone's Mathematics Pradnya Kadam
04.50PM-05.00PM	Game-based learning to raise awareness about water sustainability Parth Dhond & Anisha Malhotra-Dalvi

05.00 PM-05.20PM	Q&A + Closing Remarks by Chair
Break	
05.45PM-06.45PM	Plenary talk 4: Rosa Katermari Title: Who's the negationist now? A decolonial perspective to the post-truth debate in STEM education Chair: Ayush Gupta
06.45PM-06.50PM	Closing Remarks by Chair
Time	<b>Day 3: Wednesday, 6 July 2022</b>
No morning/afternoon sessions	
05.30PM-07.10PM	Oral presentation session: Strand 2& 3 (mixed) Pedagogy, Curriculum and local context in STEM education & Cognitive and affective studies of STEM education Chair:Shamin Padalkar
05.30PM-05.45PM	A call for mobilizing mathematics education towards gender equality in India Mahati Kopparla
05.45PM-06.00PM	The nature of steam education curriculum in Nepal Netra Kumar Manandhar, Bal Chandra Luitel, Binod Prasad Pant, Indra Mani Shrestha & Niroj Dahal
06.00PM-06.15PM	Developing Informal Inferential Reasoning: Evidence from Tribal Area of Palghar District Mitali Thatte & Nilesh Nimkar
06.15.PM-06.30PM	Exploring the scope for using data science in the teaching and learning of mathematics: an action research among secondary school students Jasneet Kaur
06.30PM-06.45PM	Affective draw: gamified mathematics activities for improved maths learning, attitudes, and interdisciplinary transfer Amèya Kolārkar
06.45PM-07.00PM	Use of analogies for class 6 students to classify plants: verbal analogies versus activity-based analogies Kruthika Bs & Pratistha Agarwal
07.00PM-07.10PM	Closing Remarks by Chair
Break (20 minutes)	
07.30PM-08.30PM	Plenary talk 5: Susan Jurow Using STEM to Center Community Desires Chair:Ankush Gupta
Time	<b>Day 4: Thursday, 7 July 2022</b>
10.00AM-11.25AM	Oral presentation session: Strand 1 History/Philosophy/Ethics of STEM – implication for education Chair:Jayasree Subramanian
10.00AM-10.15AM	Artistic ways of knowing reinforcing interdisciplinary science learning Dave Del Gobbo, Sheliza Ibrahim, Sarah El Halwany, Majd Zouda, Nurul Hassan, Mirjan Krstovic, Larry Bencze, Gonzalo Guerrero & Nicole Kofman
10.15AM-10.30AM	Regional disparities in educational opportunities in Kerala Muhammed Kutty P V, Ahmed Ashraf Z A, Fajrul Ihsan P V & Hashim N K

10.30.AM-10.45AM	Towards an evidence informed policy-making model: design and implementation of a teacher professional development program Arjun Prasad, Sanjay Chandrasekharan, Sreejith Alathur & K K Mashood
10.45AM-11.00AM	The vulgar and the pristine: exploring the barriers in using the vernacular while talking about sexuality in biology classrooms. Panchami Jose
11.00AM-11.15AM	Promoting critical mathematical literacy Nadia Kennedy
11.15AM-11.25AM	Closing Remarks by Chair
Break (15 minutes)	
11.40AM-12.40PM	Poster presentation session: Strand 4 Research to practice in disciplinary and interdisciplinary spaces Chair:Mahima Chhabra
11.40AM-11.50AM	Climate Change in Environmental education in Middle-schools over West Bengal: status and perception evaluation Arindam Roy
11.50AM-12.00NOON	Reshaping makerspaces to learn frontier making practices Geetanjali Date, Ravi Sinha & Sanjay Chandrasekharan
12.00NOON-12.10PM	Experiencing covid-19 pandemic from the lens of realistic mathematics education (RME) Kumar Gandharv Mishra
12.10PM-12.20PM	High school student's participation in scientific investigations: its impact on their competencies and attitude towards science Venkata Krishna Bayineni
12.20PM – 12.40PM	Q&A Closing Remarks by Chair
Break (2 hours 50 minutes)	
03.30PM-04.30PM	Plenary talk 6: Louise Archer Supporting Equity and Inclusion in STEM Chair:Jayasree Subramanian
Break (1.30 hours)	
06.00PM-07.20PM	Poster presentation session: Strand 3 Pedagogy, Curriculum and local context in STEM education Chair:Charudatta Navre
06.00PM-06.10PM	Teachers' belief and practices related to using stories as science pedagogy Punam Medh & Shamin Padalkar
06.10PM-06.20PM	Identifying gaps in students' understanding of algebraic identities: Tools from Indic Knowledge Systems Vinay Nair
06.20PM-06.30PM	Anandi: using print media to reach the unreached during the pandemic and beyond Asmita Redij, Arnab Bhattacharya, Megha Chougule, Vikrant Ghanekar, Suravi Kalita, Sarita Kamat, Vijay Lale, Shweta Naik, Vikram Patil, Harita Raval, Pritesh Ranadive, Uzma Shaikh, Sai Shetye & Aniket Sule
06.30PM-06.40PM	An exploration of professional noticing and PCK (Pedagogical Content Knowledge) among teacher educators from low resource countries Anirudh Agarwal, Arushi Bansal & Ruchi Kumar

06.40PM-06.50PM	Fluency in single-digit addition and related subtraction facts among indian students Praveena Katragadda & Maulik Shah
6.50PM-7:00PM	Response of an optics lab in pandemic Mahima Chhabra & Ritwick Das
07:00PM-07.20PM	Q&A <i>Closing Remarks by Chair</i>
Time	<b>Day 5: Friday, 8 July 2022</b>
10.00AM-11.00AM	Plenary talk 7: Senthil Babu Title: Mathematical Experience and Alienation: Towards social histories of Practice Chair: Shweta Naik
Break (20 minutes)	
11.20AM-12.30PM	Poster presentation session: Strand 1, 2, 3 & 4 (mixed) History/Philosophy/Ethics of STEM – implication for education, Cognitive and affective studies of STEM education, Pedagogy, Curriculum and local context in STEM education & Research to practice in disciplinary and interdisciplinary spaces. Chair: Sarita Kamat
11.20AM-11.30AM	Integration of public health and proportional reasoning-a demand of time Debasmita Basu
11.30AM-11.40AM	Experiential learning in school mathematics: transforming theory into practice Tarun Tyagi
11.40AM-11.50AM	A preliminary study: beating the barrier of language in science teaching for underprivileged students Anamika Sharma, Subhadip Senapati & Athavan Alias Anand
11.50AM-12.00NOON	Socioscientific Issues and Science Education Vishal Kumar & Sanjiv Kumar Choudhary
12.00NOON-12.10PM	Mereology For STEAM and Education Research Mani A
12.10PM-12.30PM	Q&A Closing Remarks by Chair
12.30PM-01.00 PM	Feedback & concluding remarks by epiSTEME 9 Convenors Deepa Chari, Ayush Gupta, and epiSTEME 9 participants