Faculty of **Education**
The University of Hong Kong
香港大學教育學院

40 Touching HEARTS | Inspiring MINDS

Centre for Information Technology in Education
Faculty of **Education**, The **University of Hong Kong**

Artificial Intelligence (AI), Climate Science, and Science Education Pedagogy

Professor Marcia C. Linn
Graduate School of Education
University of California, Berkeley

Date: **November 18, 2024 (Monday)**

Time: **12:45 – 14:00**

Venue: **Room 206, Runme Shaw Building, HKU / Online via Zoom** *(Hybrid mode)*

Chair: *Professor Nancy Law*

Registration:

(In-Person)   **(Zoom)**

Abstract:
Artificial Intelligence (AI) offers promise for strengthening science education including the teaching of social justice science topics such as climate science. We are studying ways to use AI to extend the practices of experienced teachers. Our partnership including teachers, computer scientists, and learning scientists has developed and refined AI solutions for climate science guided by Knowledge Integration (KI) pedagogy. For example, we are exploring ways to guide students to consider whether factors such as particulate matter pollution impact everyone similarly or whether some people are impacted more than others. Initially, the partners designed AI tools to guide students' written explanations. Students using the tools were more likely to revise their explanations and improve their reasoning than students receiving typical guidance, especially if they followed suggestions to reconsider the implications of the interactive models in the curriculum. Subsequently, we designed AI tools to identify the ideas in students' explanations and collaborated with teachers to figure out which student ideas to select. Guiding on ideas resulted in further increases in the proportion of student who revised. This talk illustrates ways that AI can transform science education and how exploring uses of AI spurs refinement of KI pedagogy. The talk concludes with a vision for future roles for AI in education.

About the speaker:
Marcia C. Linn, Evelyn Lois Corey Professor of Instructional Science, Graduate School of Education, University of California, Berkley. Member: National Academy of Education. Fellow: American Association for the Advancement of Science (AAAS), American Psychological Association. Elected: Chair, AAAS Education Section, President, International Society of the Learning Sciences. Directs: NSF-funded Technology-enhanced Learning in Science (TELS) community. Boards: AAAS, Graduate Record Examination, Education and Human Resources Directorate at NSF. Awards: National Association for Research in Science Teaching Award for Lifelong Distinguished Contributions to Science Education; American Educational Research Association: Willystine Goodsell Award; Council of Scientific Society Presidents first award for Excellence in Educational Research. Latest book: Science Teaching and Learning (2011).

~ All are welcome ~

For enquiries, please contact the Office of Research, Faculty of Education at hkchow@hku.hk