An Interactive Learning Unit about PET

Positron-Emission-Tomography

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Interactive learning units are a new, virtual, and versatile format for **classroom and distance learning**

MOTIVATION

COVID-related challenges for our visitors to come to CERN

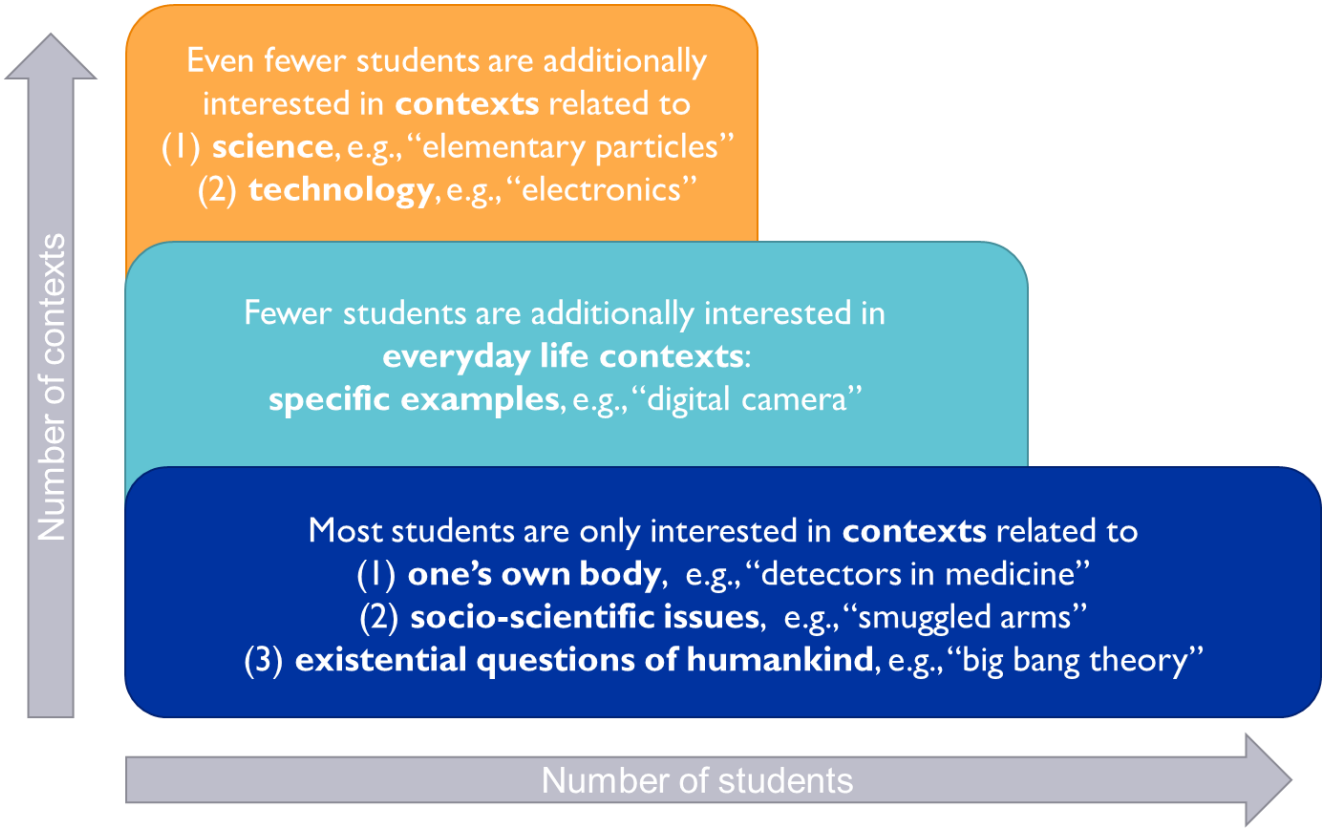
Enhancement of our online offers beyond the pandemic times

Extension of the hands-on PET workshop in our lab

AIM #1

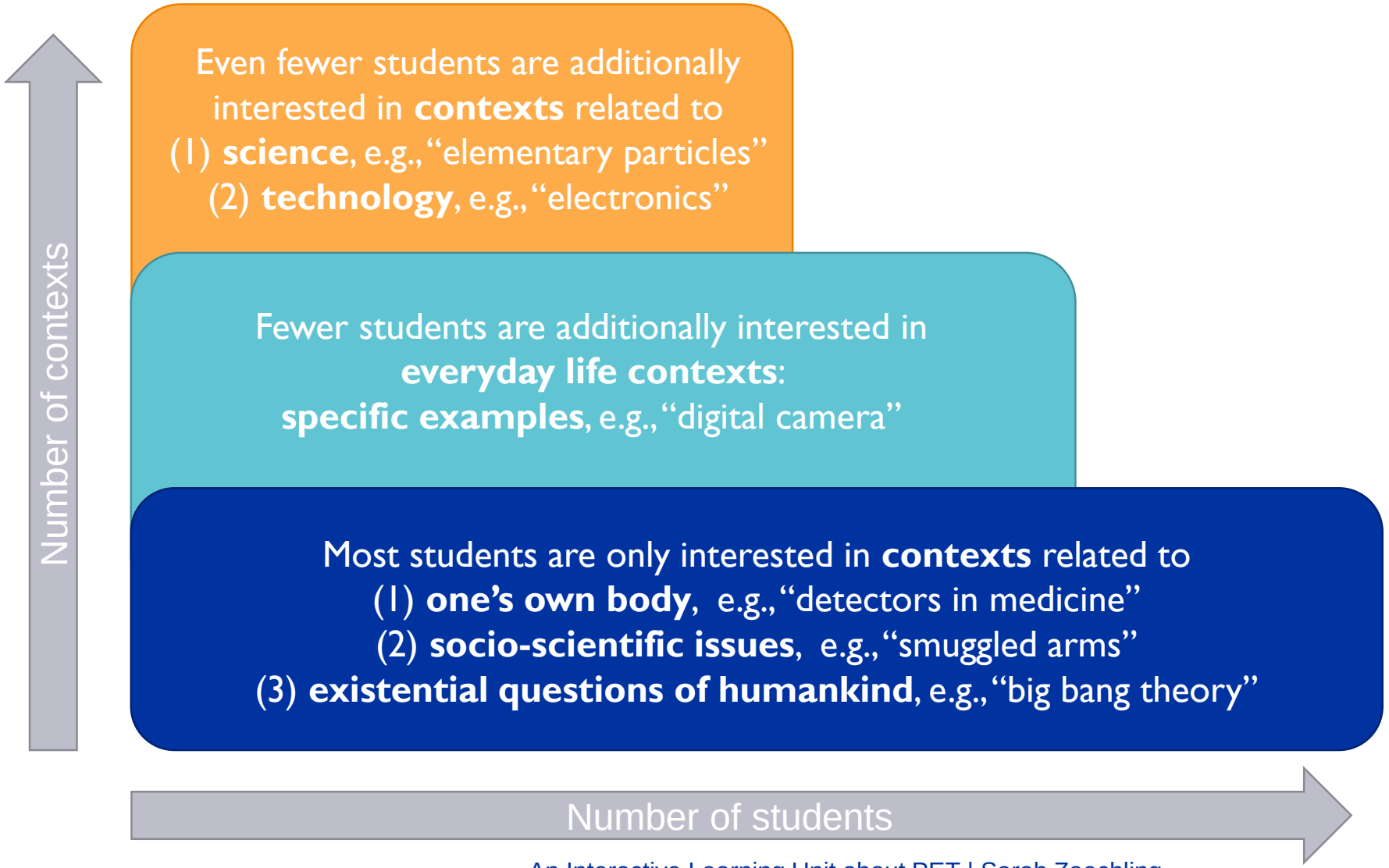
Foster students' interest in particle physics!

- **Past empirical studies:**
  Most students are interested in medical contexts
  OECD (2016), Levrini et al. (2017)
- **My PhD project:**
  Conceptualisation of interest in Particle Physics
  Zöchling et al. (2022)



This conceptualisation of interest in particle physics is valid for 79% of students

Conceptualisation of Interest in Particle Physics



AIM #2

Easy to use for teachers in classroom and distance learning

- **Duration:** 2 school lessons
- Can be done on one's **own laptop or tablet**, in the **school IT room** or with **school tablets**
- **Target age:** 16+

AIM #2

Easy to use for teachers in classroom and distance learning

- **Format:** H5P Module
  - ⇨ Can be easily **embedded in learning platforms** (e.g., Moodle, Blackboard, Brightspace, ...)
- **Link**: cern.ch/petworkshop

Examples for Anchoring in Curricula

Austria

Secondary School

Grade 12
medical applications

Germany

Secondary School
in Baden-Württemberg

Grades 9 and 10
medical applications

USA

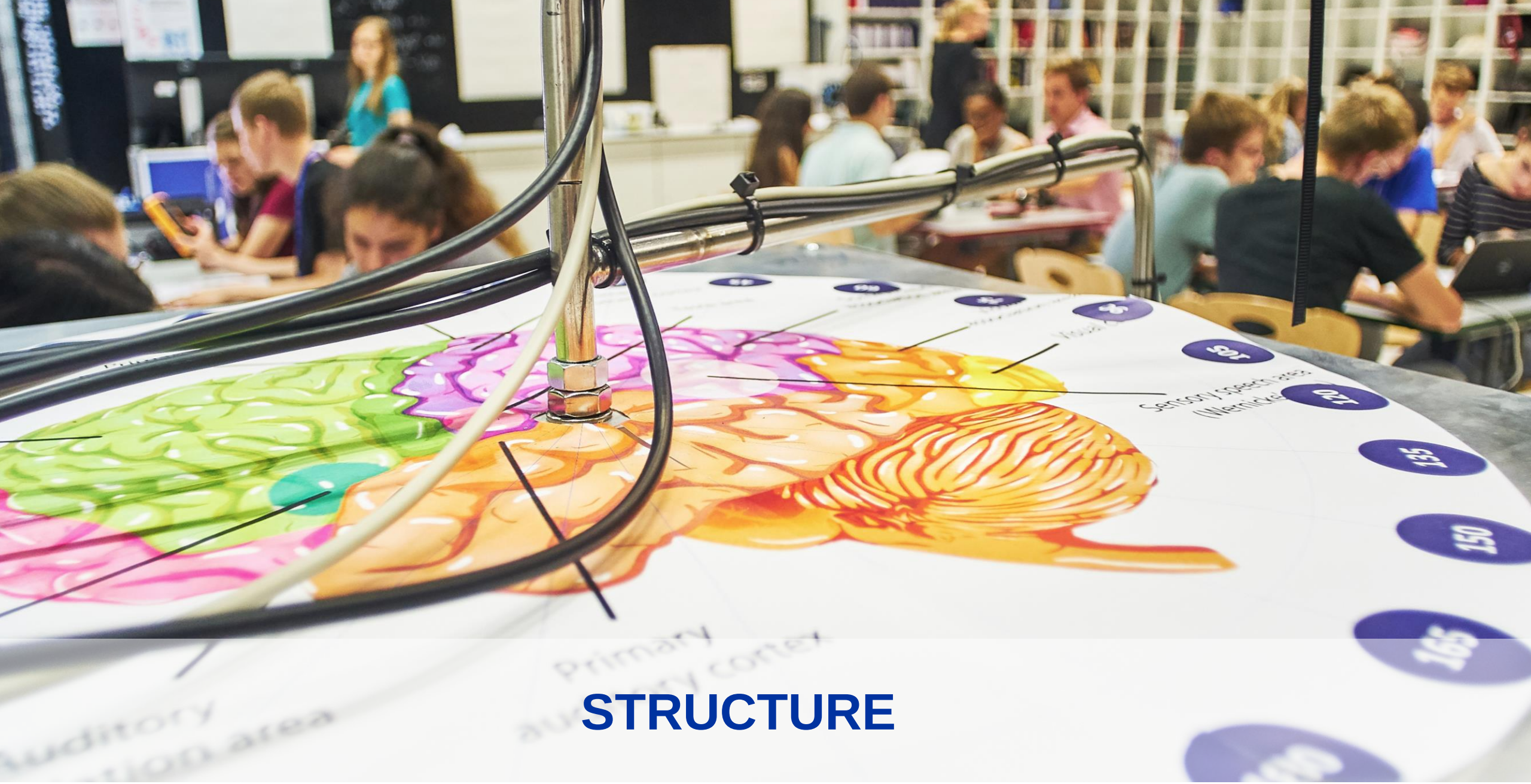
Next Generation Science Standards
K-12 in 26 states

Grades K-12

„The use of various applications of science, such as medicine, […] would nicely facilitate student interest”

LANGUAGE

- **English**
- **Subtitles in different languages**



STRUCTURE

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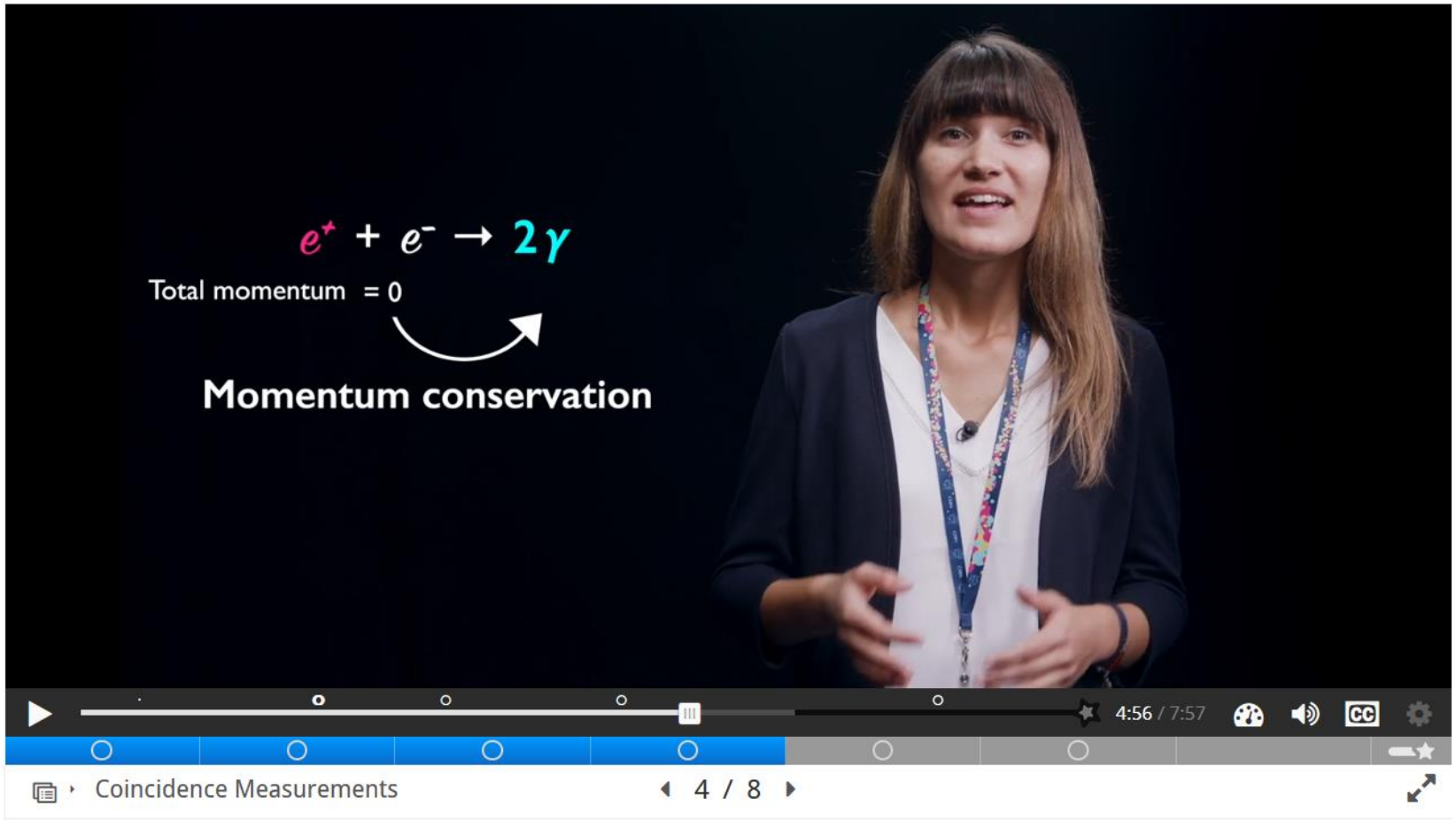
Explanatory Videos



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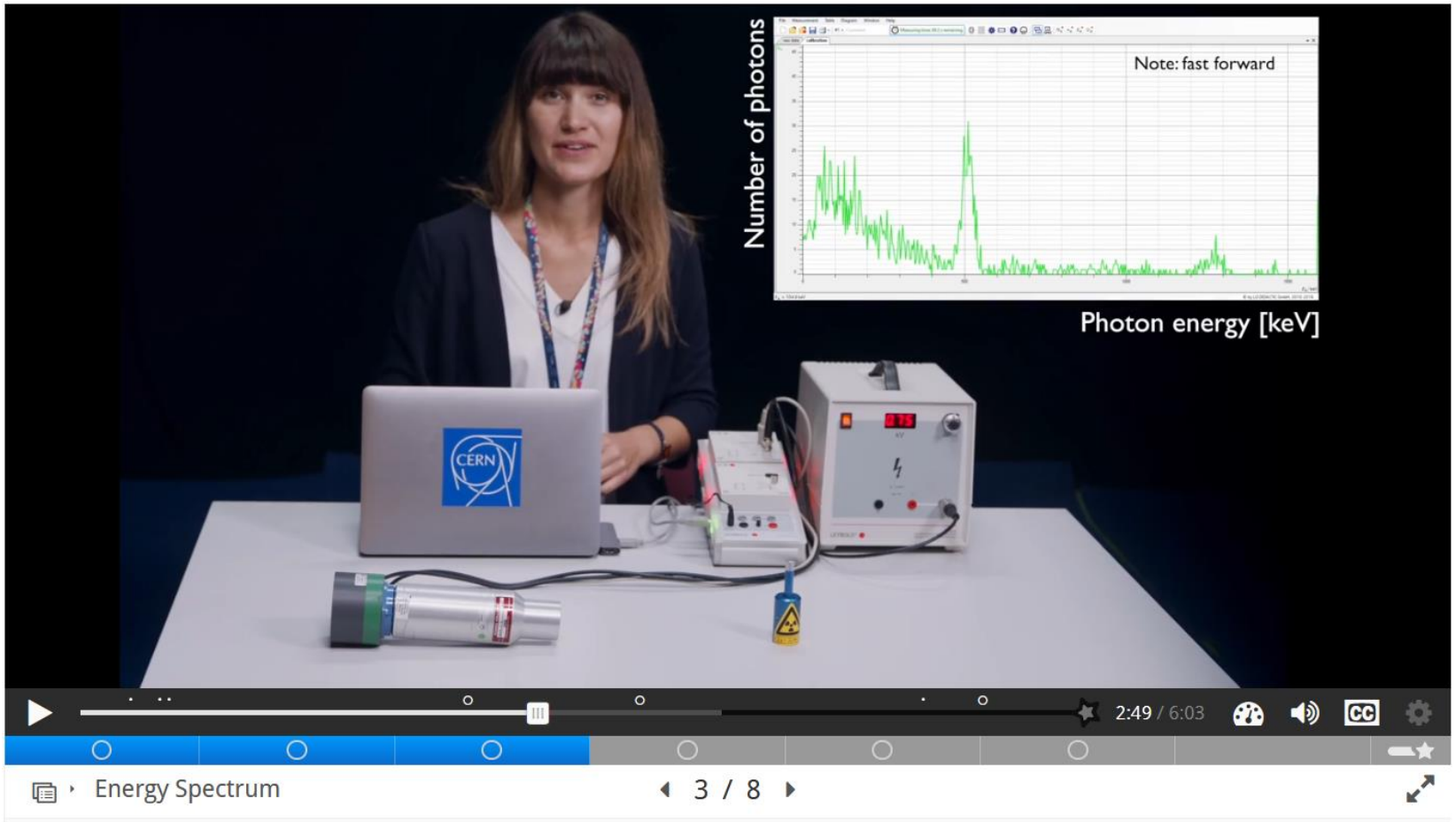
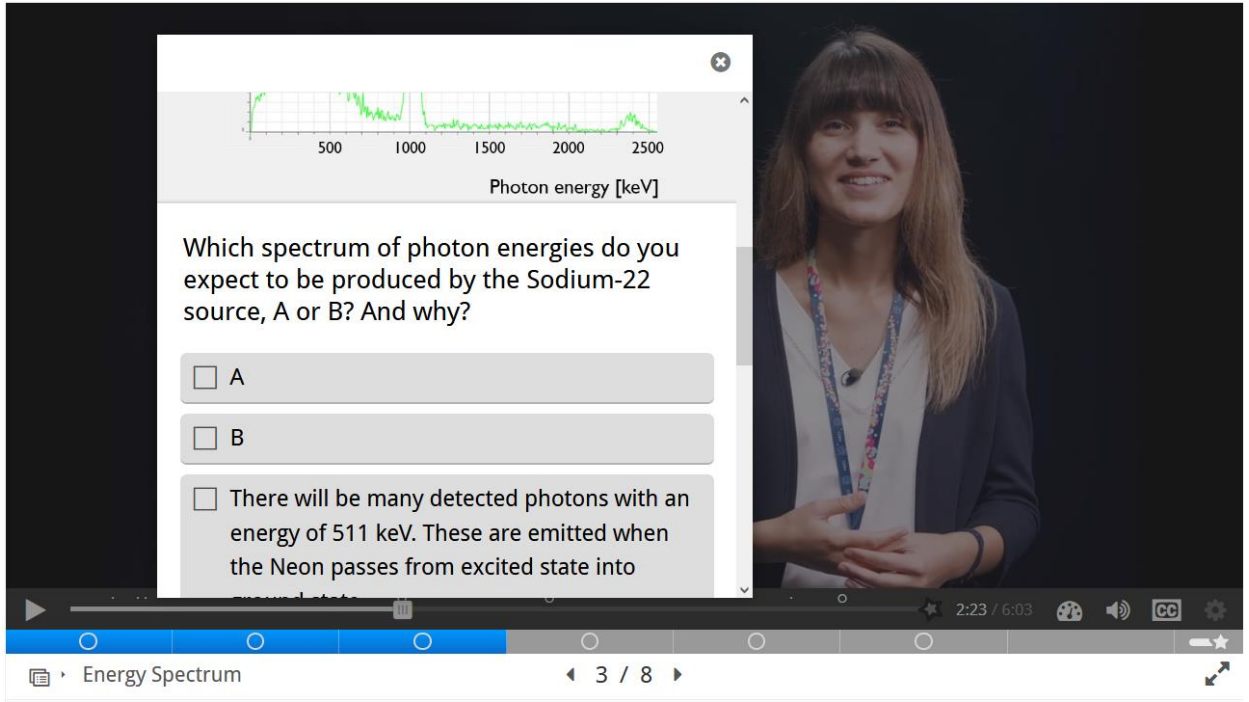
Experiment Videos

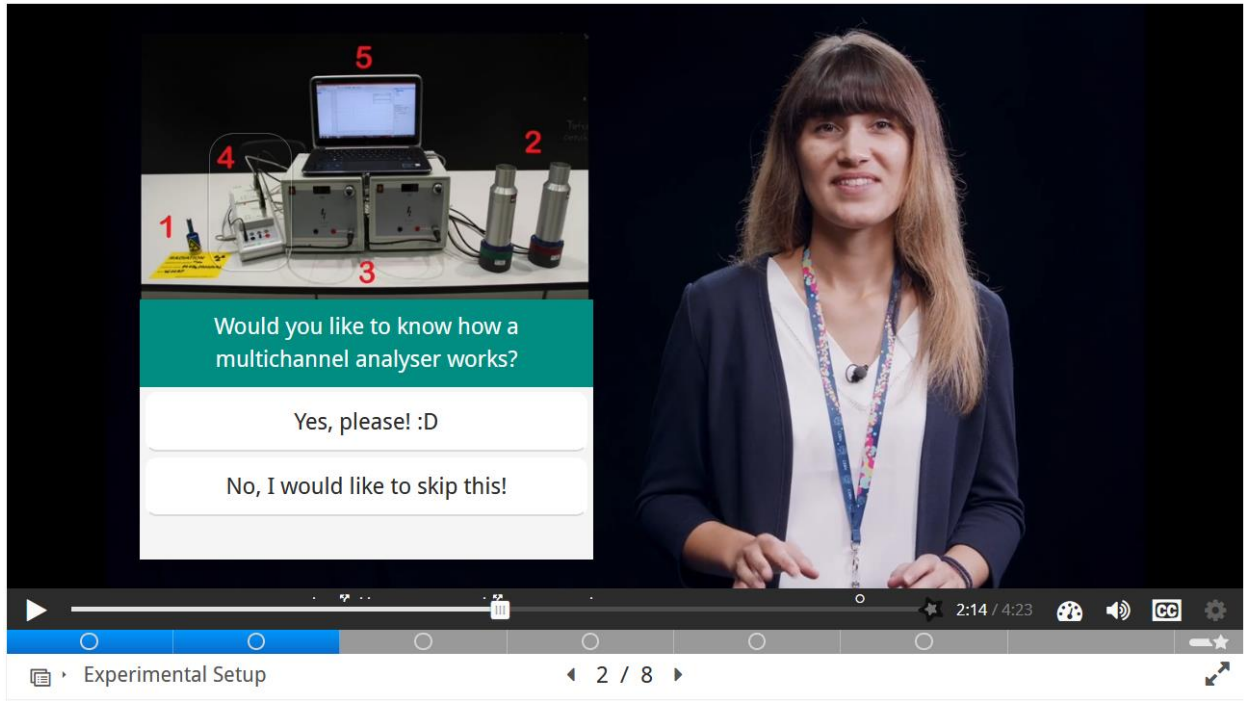


STRUCTURE

Interactive Elements



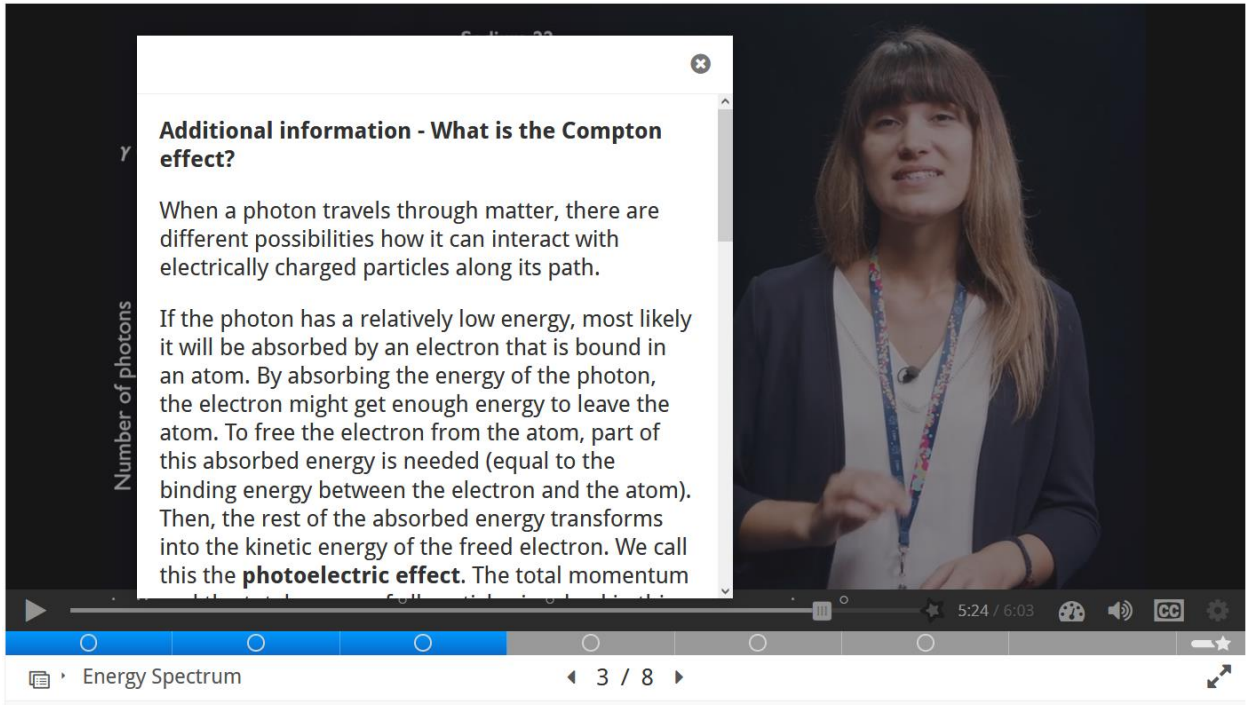
Quizzes



Shortcuts

STRUCTURE

Interactive Elements



Additional Information

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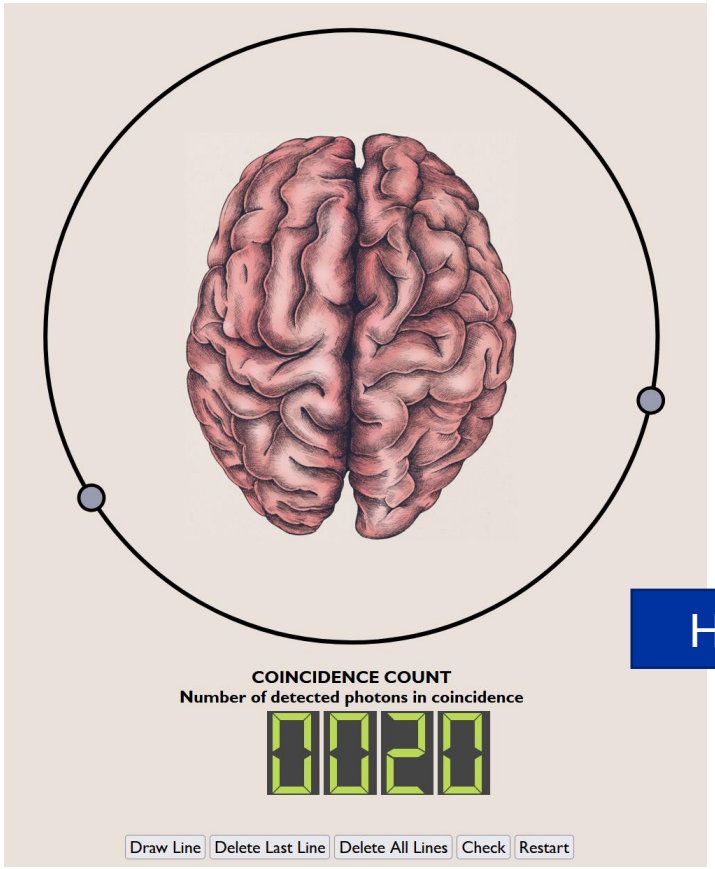
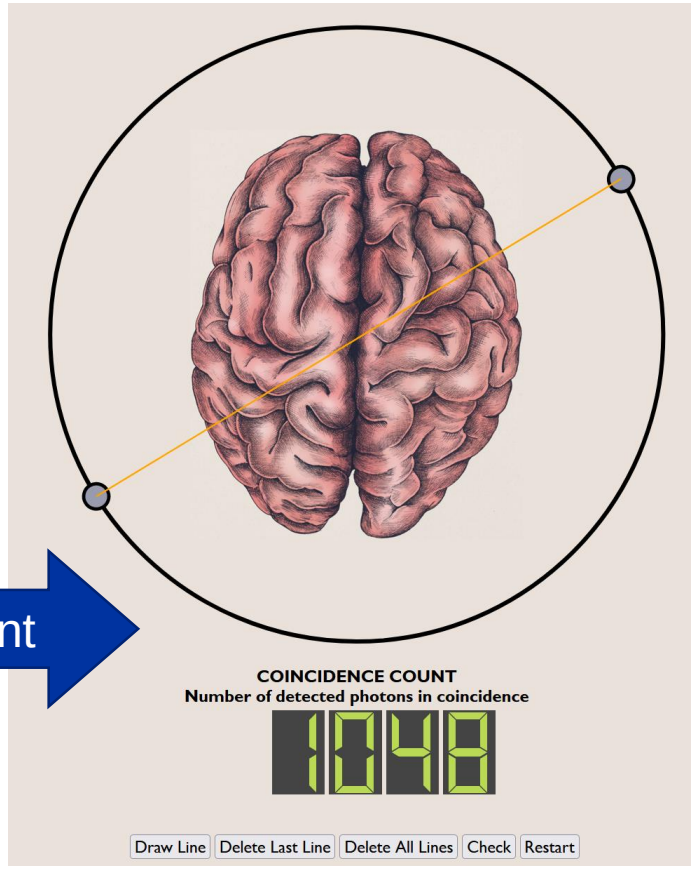
Interactive PET Experiment



High Coincidence Count



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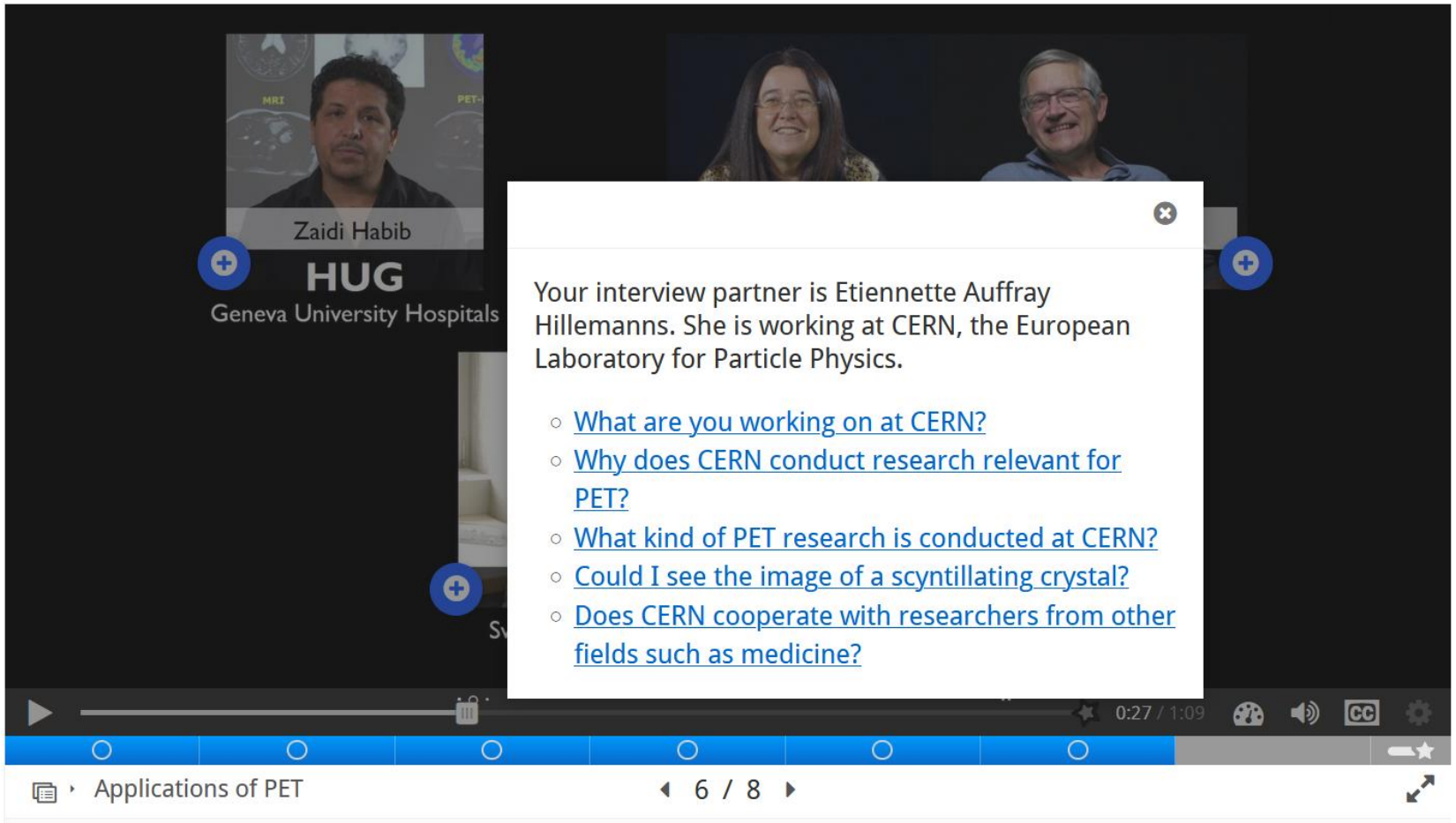
Interviews with Experts



NEXT STEPS

- **Subtitles:**
  Adding further languages

- **Advertisement:**
  Spreading the Interactive Learning Unit about PET among educators worldwide

- **Physics Education Research:**
  Panagiota's PhD project aims
  - to **evaluate** the Interactive Learning Unit about PET and
  - to **develop** further Interactive Learning Units

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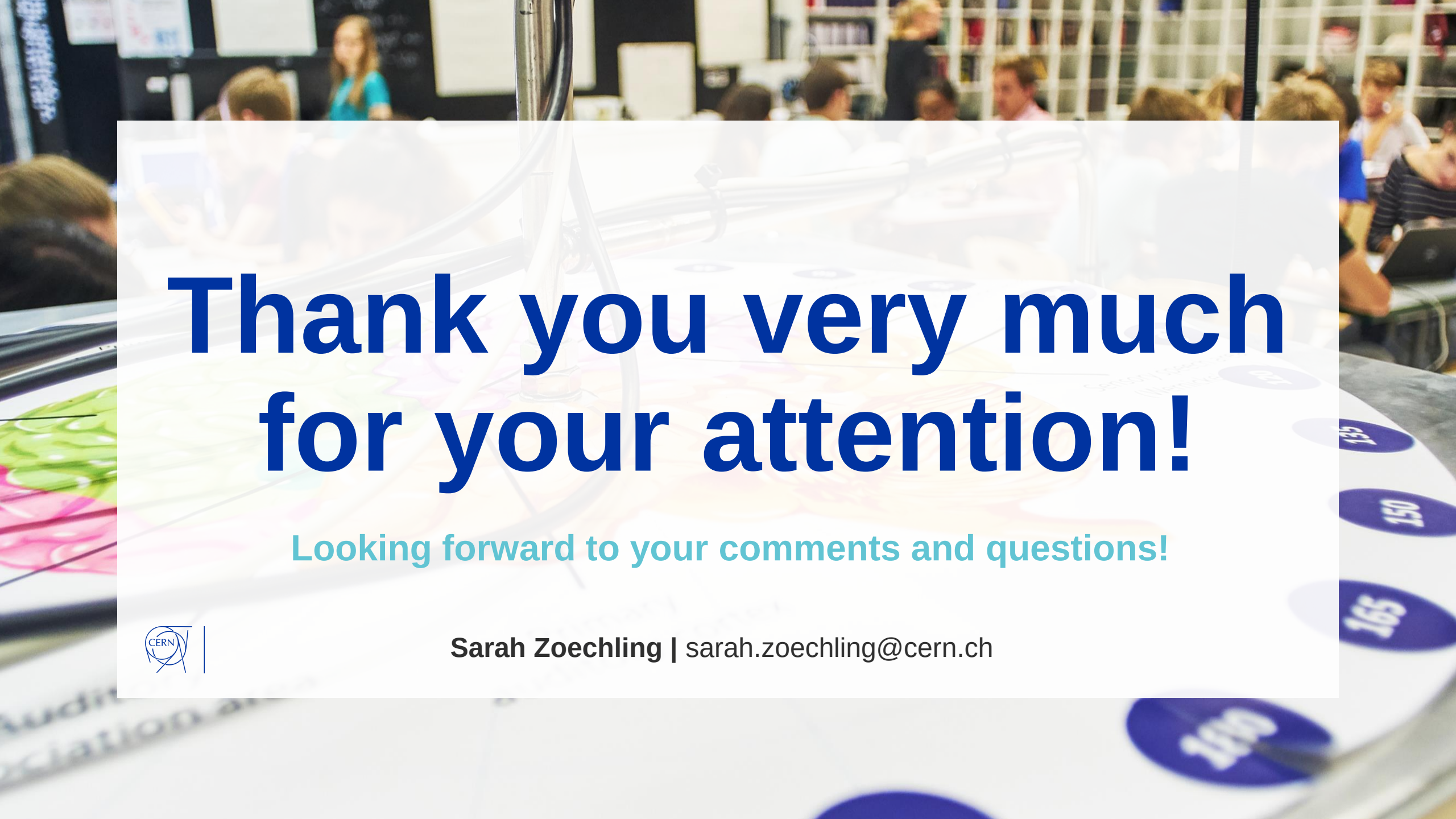

Thank you very much for your attention!

Looking forward to your comments and questions!

Sarah Zoechling | sarah.zoechling@cern.ch

Back-up Slides

Examples for Anchoring in Curricula

Austria

Secondary School

Grade 12

Nuclear Physics:
- natural radioactivity,
- ionising radiation,
- medical applications

Particle Physics

Germany

Secondary School
in Baden-Württemberg

Grades 9 and 10

Structure of matter:
- ionising radiation
- medical applications

USA

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