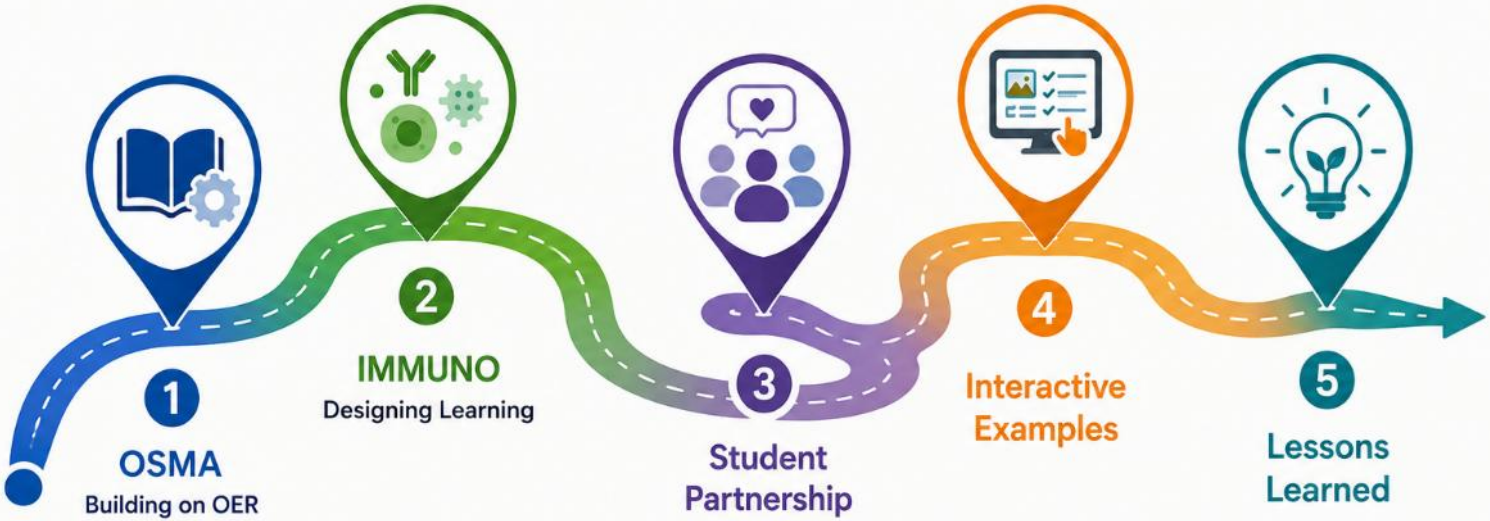
From Remix to Reimagine: Adapting OERs for Interactive and AI-Enhanced Learning

Ying Liu
University of Southampton

Today's Journey

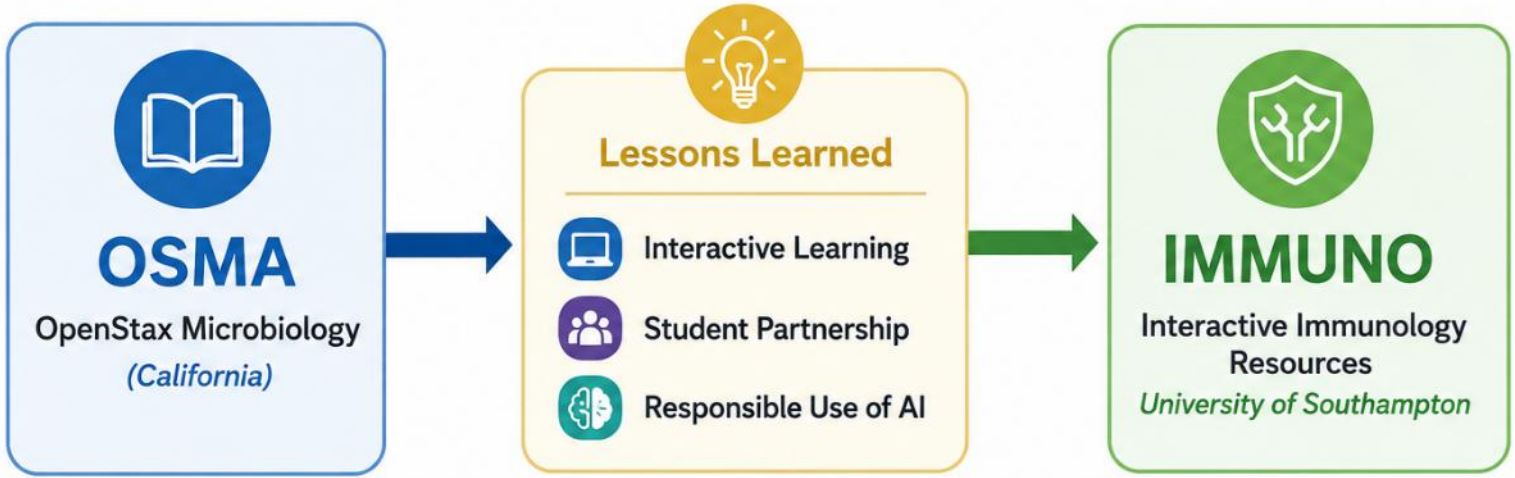
From adapting open resources to reimagining interactive learning



Two projects. One journey. Together, they represent a shift in how we **design, build and share** open learning experiences.

Two Projects. One Journey.

From adapting open resources to designing open learning experiences



Moving from creating OER to enabling **Open Educational Practice**

The California Open Education Ecosystem

Creating the conditions for open educational innovation

OERI
Innovation Grants

Faculty-led development and evaluation

LibreTexts
Open Publishing Platform

Create • Adapt
Remix • Share

Open Educational Innovation

- Faculty-led innovation
- Student partnership
- Continuous improvement

Collaborative Community

Educators • Students
Institutions

Zero Textbook Cost (ZTC)

Affordable pathways for students

Examples of Educational Innovation

OSMA
Open microbiology learning

→ Lessons travel →

Project IMMUNO
Interactive immunology learning

Innovation travels when communities share openly.

The California Open Education Ecosystem provided the foundation for OSMA—and continues to inspire Project IMMUNO at the University of Southampton.

OERI
OPEN EDUCATIONAL RESOURCES INITIATIVE

LibreTexts
The Global Open Textbook Initiative

ZTC CA
ZERO TEXTBOOK COST

OSMA *by the Numbers*

Building open microbiology learning through collaboration

OUR COLLABORATORS

WEST COAST COLLABORATORS

8 Faculty Collaborators

5 Student Collaborators

Across community colleges and universities in California and Hawai'i

UNIVERSITY OF DUNDEE

3 Faculty Collaborators

9 Student Collaborators

Supporting adaptation, innovation and evaluation

OUR OUTPUT

1,278 ADAPT Questions

Assessment questions mapped to Bloom's taxonomy

26 Interactive OpenStax Case Studies

Interactive cases in H5P / LibreStudio

15 "Disease of the Week" Case Studies

Real-world cases to apply microbiology

3 EDI-Enhanced Case Studies

Promoting diversity, equity and inclusion

2 Dundee-Specific Case Studies

Contextualised for local curriculum

1 Open Textbook

Introduction to Microbiology

Adapted and enriched from OpenStax

Open resources. Shared expertise. Lasting impact.

Collaboratively developed across institutions and disciplines.

From Adoption to Reimagination:
The Evolution of OSMA

CALIFORNIA (OSMA) — UNITED KINGDOM (IMMUNO)

BUILD
2020–2022

- Adopt & adapt OpenStax *Microbiology*
- Question banks
- Case studies & supporting resources

IMPROVE
2022–2023

- Accessibility
- Feedback
- Assessment & adaptation

TRANSFORM
2023–2025

- H5P interactive activities
- Active learning & retrieval practice
- Student partnership

REIMAGINE
2025–Present

- Project IMMUNO
- AI-enhanced resources
- Evaluation & continuous improvement

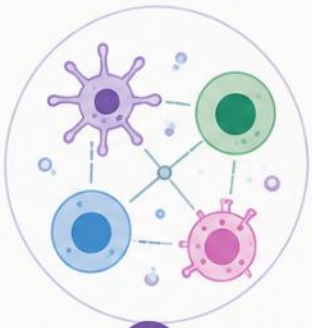
FUNDING & PARTNERS

ASCCC OERI (Academic Senate for California Community Colleges) — LibreTexts — LibreTexts — University of Southampton

2020 — 2022 — 2023 — 2025 — PRESENT

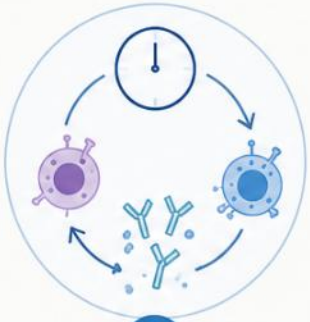
A six-year journey of iterating, improving and innovating to create better open learning experiences.

Why Immunology is difficult to learn?



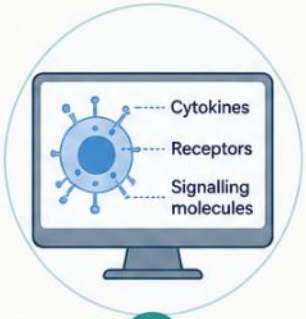
1

Complex interactions



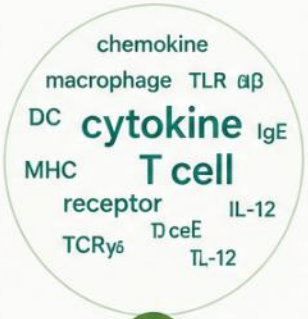
2

Dynamic processes



3

Invisible mechanisms



4

Heavy terminology

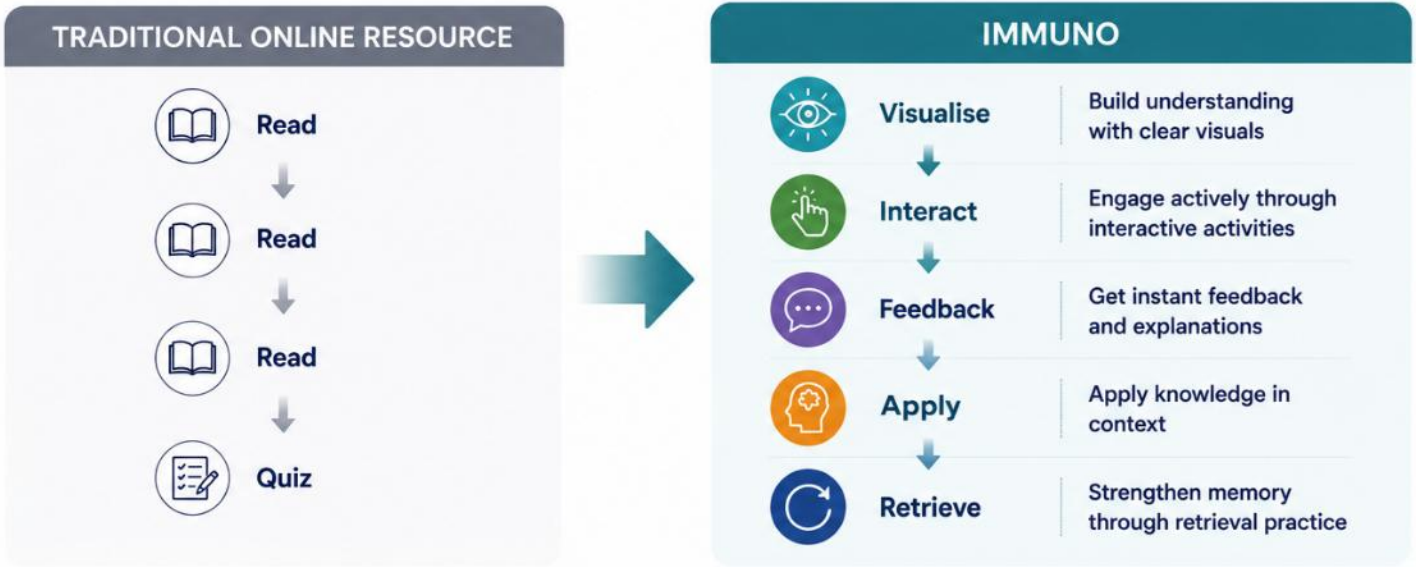
5

Clinical integration

Students need more than information—
they need opportunities to visualise • practise • apply

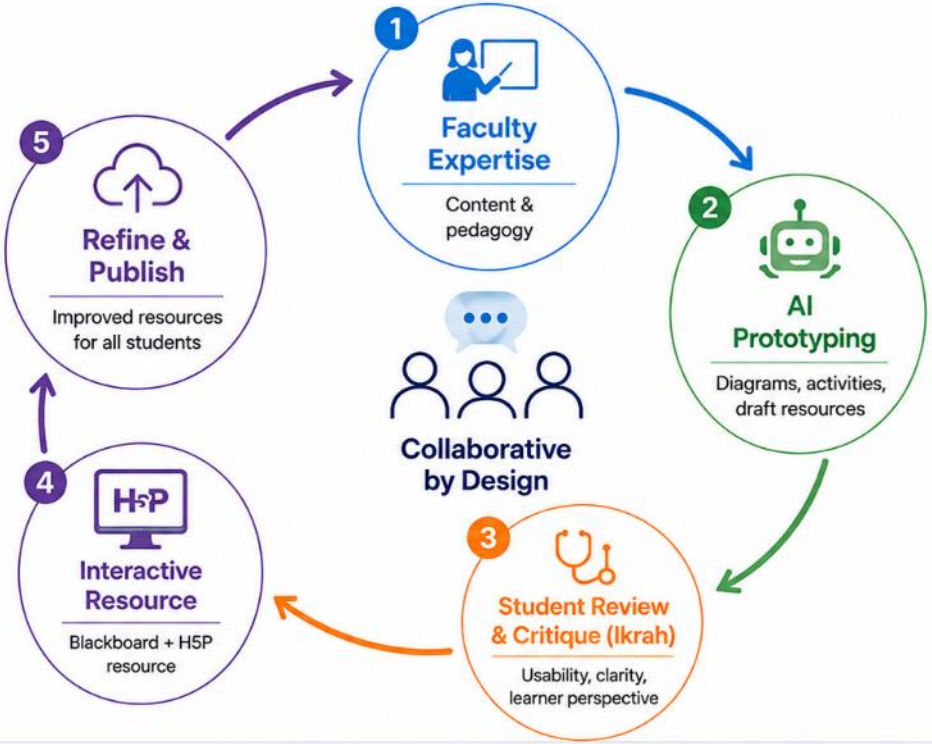
Evidence-Based Learning Design

How educational theory shaped the IMMUNO learning experience.



Evidence-based design. Engaged learners. Better learning outcomes.

Student–Staff Co-Creation



Medical Student Perspective

Ikrah Shah
Medical Student Partner

- Tested activities
- Challenged assumptions
- Improved clarity
- Represented learner needs

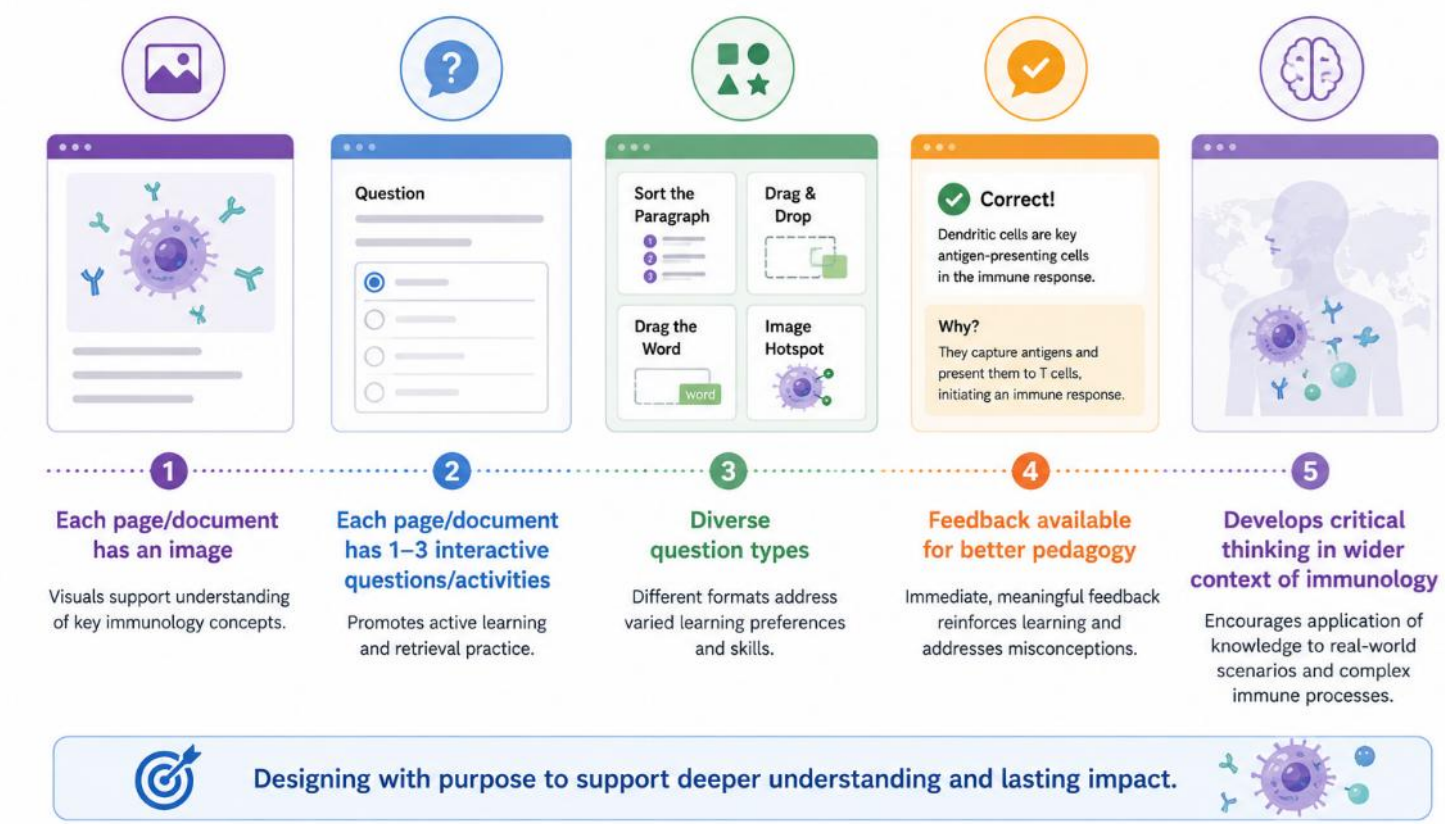
Faster development
AI-powered prototyping accelerates creation

Learner-centred design
Student input ensures clarity, relevance and usability

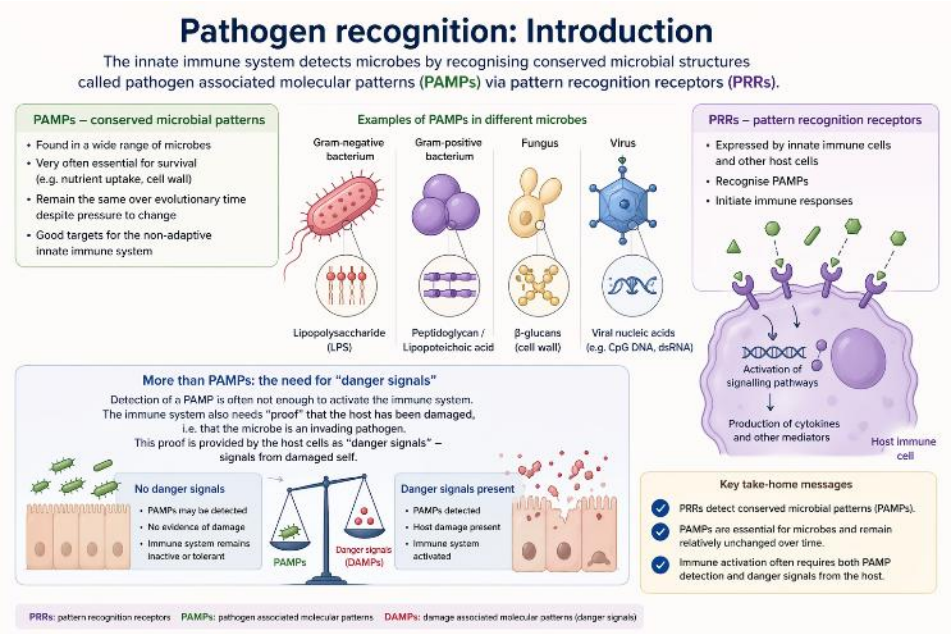
Meaningful partnership
Students and staff co-create better learning experiences

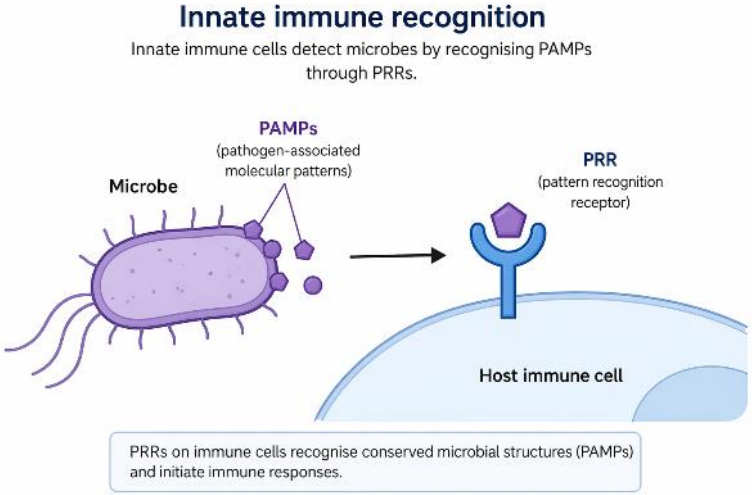
Better learning outcomes
High-quality, engaging resources that support deeper understanding

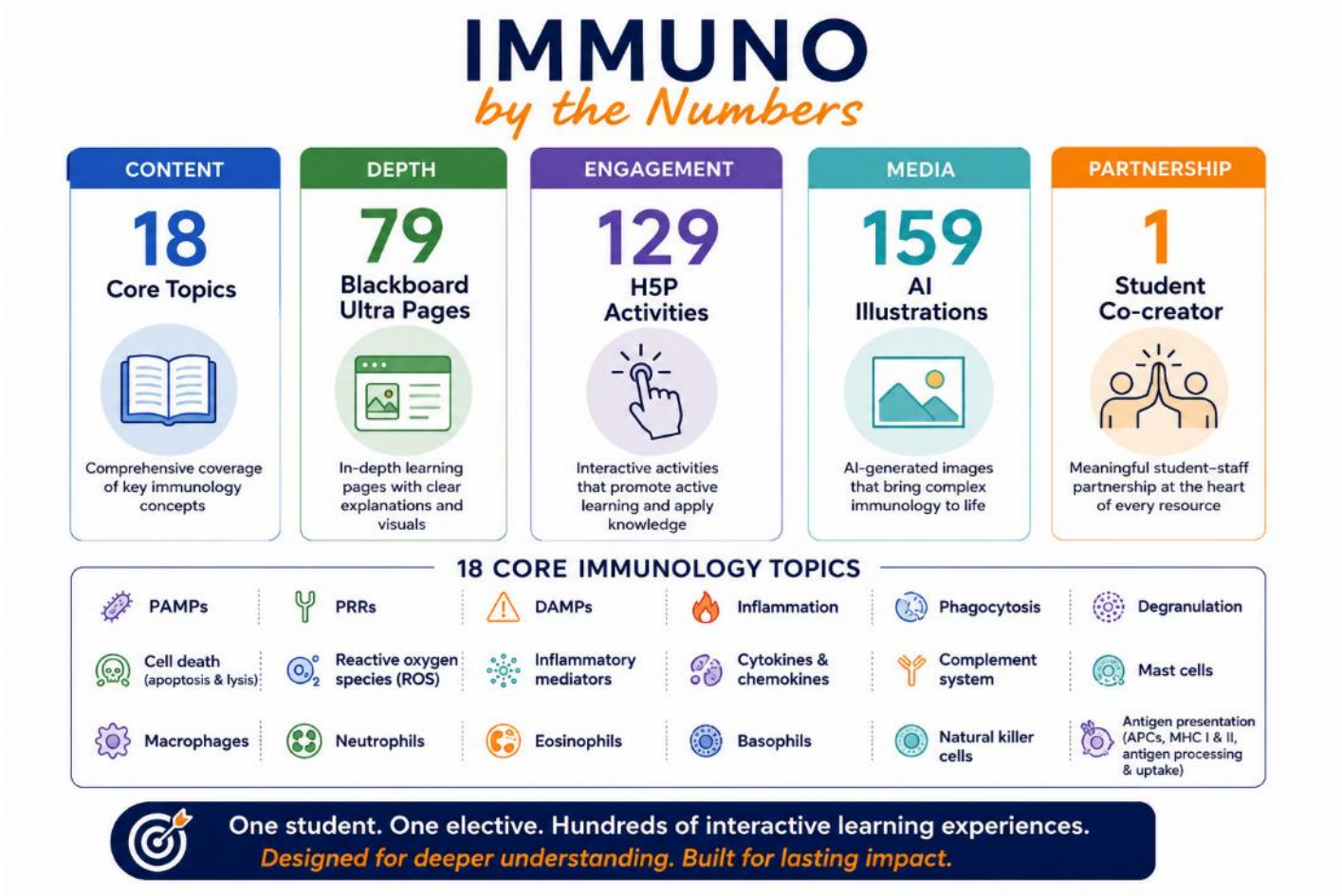
Design Principle (AI as Design Partner)



AI-Generated Images







UoS Immunology Resources | LibreStudio

Example Activities (H5P/LibreStudio)

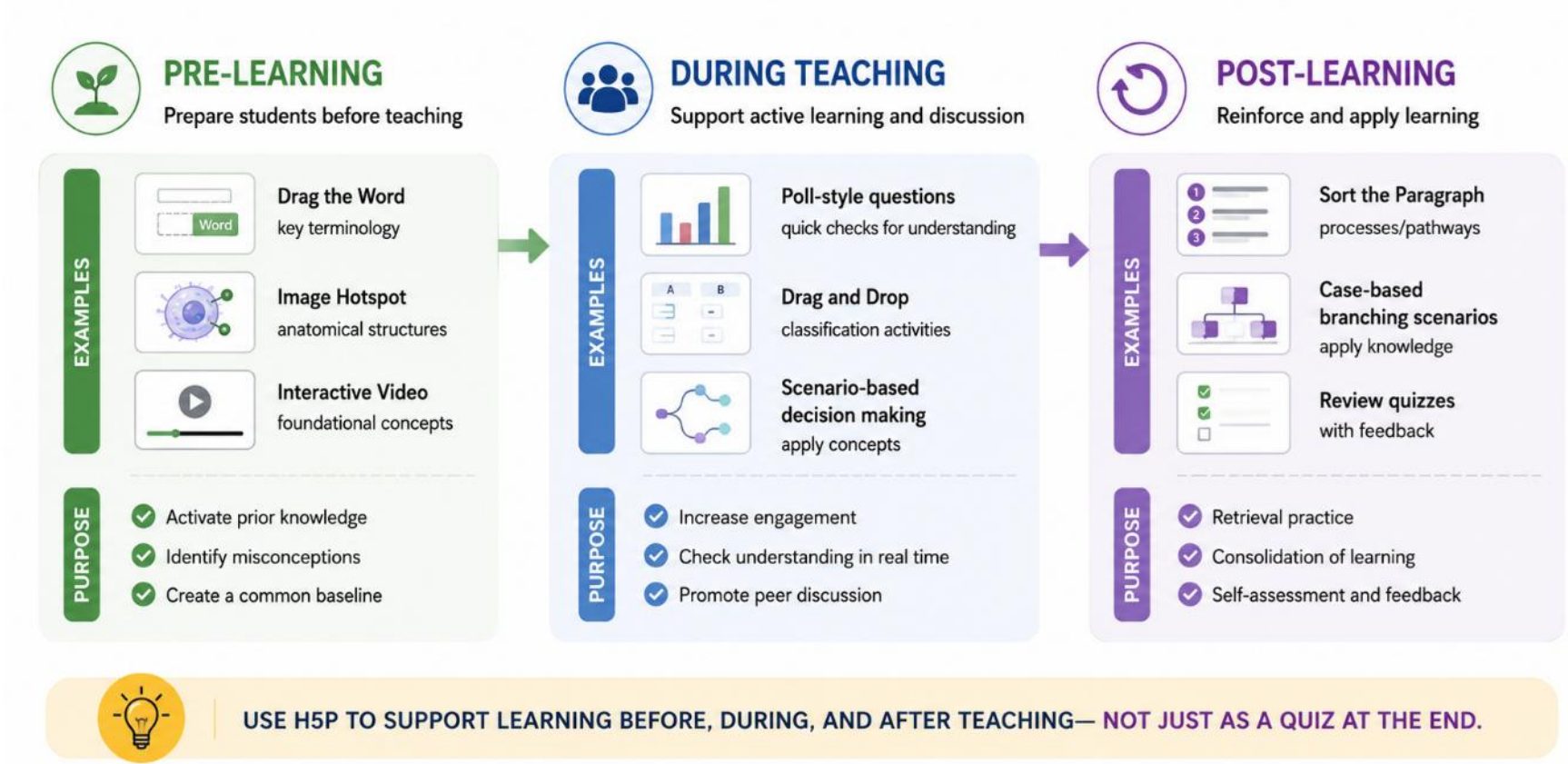
Sort the Paragraph: Arrange the different steps in the correct order

Drag and Drop: Place the correct terms or images in the appropriate locations

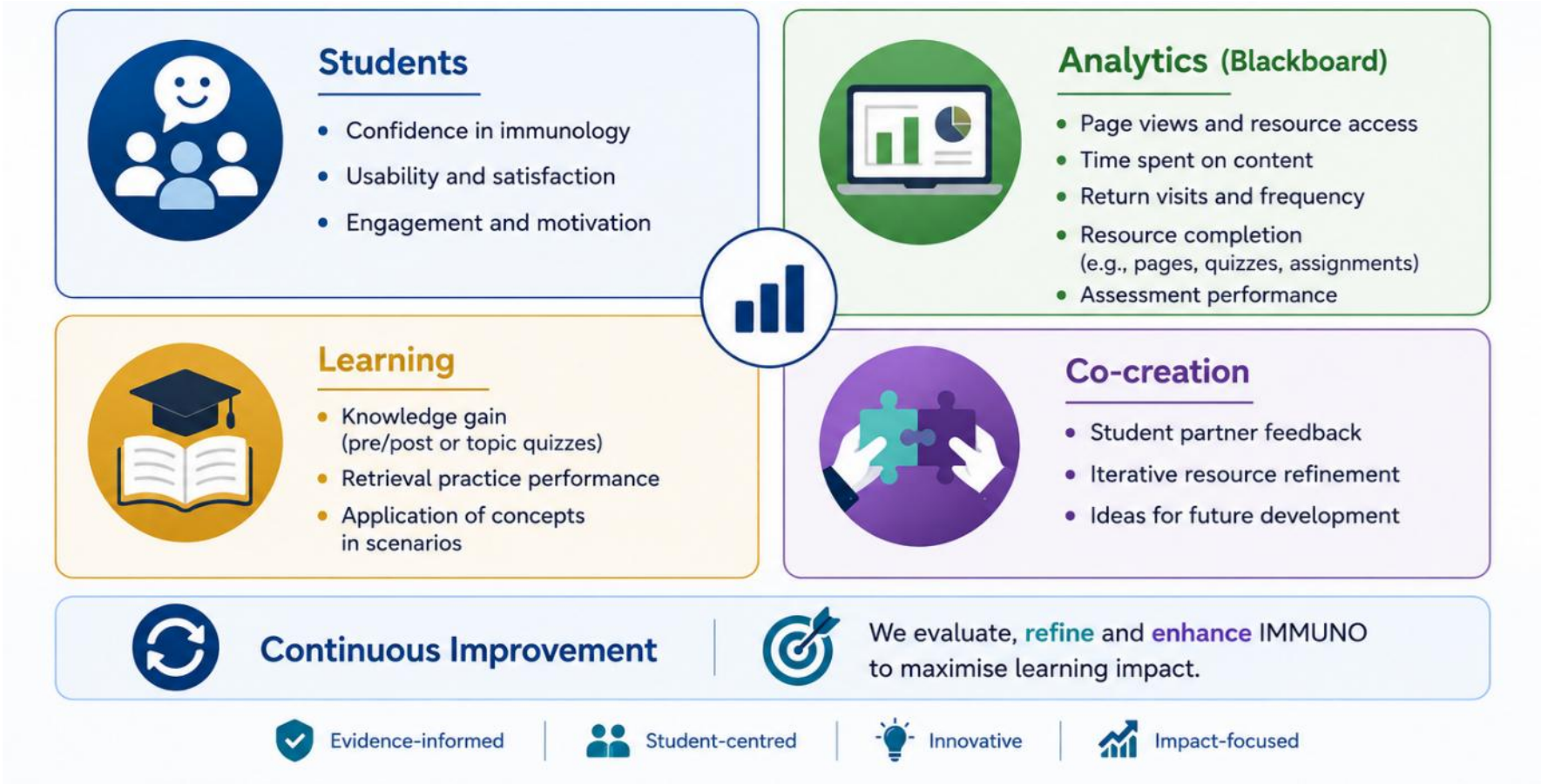
Image Hotspot: Click on different parts of an image to learn more about key structures and concepts

Drag the Word: Complete the sentences by dragging the correct words into the appropriate blanks

Integrating H5P into the Learning Journey



Evaluating Impact



Lessons Learned

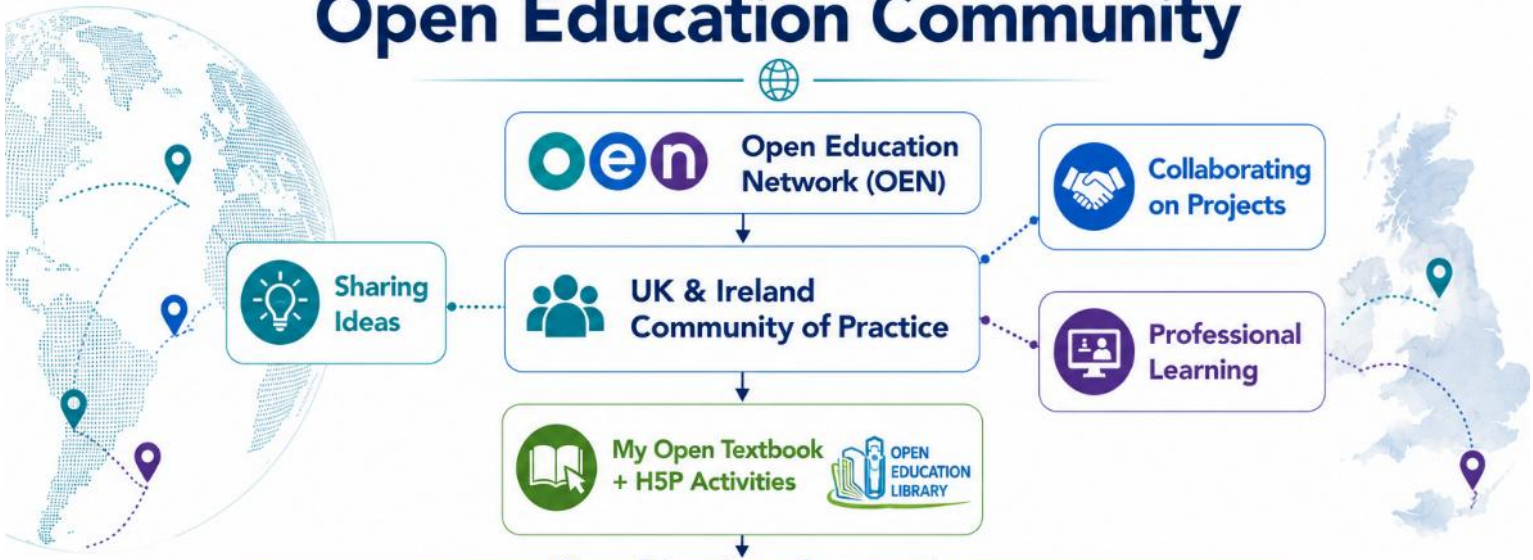
Key considerations when adapting OER for interactive and AI-enhanced learning.

University of Southampton

Challenge	Our approach
Quality assurance	Academic review of every AI-generated image, activity and explanation before publication.
Accessibility	H5P activities, alt text, multiple activity types, and inclusive learning design.
Sustainability	Modular resources, reusable components, and openly licensed content that can be continually updated.
Intellectual property	Use of open licences, attribution where required, and faculty review of AI-assisted content.

Responsible innovation requires more than technology—it depends on thoughtful design, academic oversight, and openness.

Building an International Open Education Community



Open education connects us.

Open Education Network

OPEN EDUCATION LIBRARY

UKSG

Looking Ahead

Final Reflections

1. Openness is only the beginning
2. Learning design matters most
3. AI should amplify educators
4. Communities sustain innovation

Resources

OSMA

Introduction to Microbiology (Liu et al.) - Biology LibreTexts

Introduction to Microbiology - Open Textbook Library

Case Studies for OpenStax Microbiology | LibreStudio

Pathogen Portraits: Stories of Infection, Identity, and Impact | LibreStudio

IMMUNO

UoS Immunology Resources | LibreStudio

ASCCC OERI

Open Educational Resources by Discipline - ASCCC Open Educational Resources Initiative

Thank You!

for being here today

Questions?

I'd love to hear from you.

Ying Liu
Immunology Lecturer

ying.liu@soton.ac.uk

Thank you for your interest and engagement.

Together, we're reimagining learning for a more open future.