

The Eureka Centre, UCC



Eureka Centre
for Inquiry Based Education
in Science and Mathematics



Dr Ryan Gallagher (Programme Director)



Stephen Murphy (Deputy Programme Director)

Why was the Eureka Centre set up?

The Eureka Centre was set up to provide facilities to train science teachers in UCC.

The two driving forces behind the setting up of the Eureka Centre were Professor Patrick Fitzpatrick, Head of College of SEFS, and Professor Aine Hyland, Head of Education and Vice-President UCC.

Professor Hyland was responsible for appointing the first full-time lecturer, Dr. Declan Kennedy, in Science Education in UCC in 1998 in order to increase the number of qualified science teachers graduating from UCC. At the time, UCC had no dedicated facilities for training science teachers.

The BEd Science Education degree was set up in 2000 as a joint collaboration between the colleges of CACSSS and SEFS. Professor Aine Hyland (Education), Professor Paul Brint (Chemistry), Professor Colm O'Sullivan (Physics) and Professor John O'Halloran (Zoology) gave the degree programme their full support.

In 2006 a joint application for Strategic Innovative Funding (SIF) was successfully made by SEFS in collaboration with the School of Education UCC. Prof Fitzpatrick, Ms Mairead Loughman, SEFS administrator, and Dr Declan Kennedy, School of Education, travelled to the University of York to view the facilities of the Science Education Centre there.

The Eureka Centre is modelled on the Science Education Centre at the University of York. In addition to the SIF funding, funding was obtained from various sponsors such as Pharmachemical Ireland.

Work began on the construction of the Eureka Centre in 2009 and was completed in 2011. The setting up of the Eureka Centre proved to be instrumental in increasing the numbers of students undertaking the BEd Science Education degree. From an initial intake of 10 student teachers there are now approximately 130 student teachers registered for the programme.

What facilities are in the Eureka Centre?

The Eureka Centre is the home of Science Education in UCC. It is located in the Kane Building. The Eureka Centre is where Science and Education meet in a very tangible and visible way and consists of four components:

1. **Two science education laboratories.** These two laboratories are modelled on laboratories typically found in secondary schools and are thus ideal for student science teachers to carry out all the laboratory practical work associated with the teaching of Junior Cycle science and Leaving Certificate biology, chemistry, physics and computer science.



2. **Eureka seminar room.** This room is used mainly for meetings by various groups not necessarily related to the Eureka Centre and comfortably seats 10 people. Typically supervisors on the programme use this room to meet with and discuss their students.

The room contains a whiteboard and docking station for laptops. It is also used for small group tutorials for BEd Science students and Peer Assisted Learning activities run at evening time by the School of Chemistry and Department of Physics.



3. Eureka Resource Room The Eureka Resource Room is the busiest room in the Eureka Centre and is at the very heart of the Eureka Centre. It contains all the fundamental resources required by student science teachers to prepare lessons for the pupils that they teach. Items such as school textbooks, school workbooks, teachers' handbooks, teachers' guides to curricula, school laboratory manuals, school science syllabi are not usually found in university libraries.

Every experienced science teacher would have these items in their study at home but trainee teachers would not even be aware of many of these resources. Science Education Resource Rooms are an integral part of science education centres throughout the world.

Our student teachers regularly use the resource room to discuss lesson plans, teaching methodologies and classroom management strategies.



Why cannot the resources in the Eureka Centre be placed in the university library?

Science Education centres throughout the world always contain a Resource Centre. There are several reasons why a university library is not a suitable location for resources in science education:

- The cataloguing system in libraries would mean that the physics textbooks would be allocated to the physics section of the library, the chemistry textbooks in the chemistry section, biology textbooks in a different section, general science textbooks in another section, government syllabi in another section and science education resources in a different section. Hence, student science teachers would have great difficulty trying to find the resources so badly needed to help them plan lessons. In addition, exemplar materials such as sample lesson plans and teaching resources created by former student teachers and UCC lecturers would be difficult to locate in a university library.
- The opening and closing times of the library, especially at weekends, are unsuitable for student teachers who frequently use the Eureka Centre for lesson preparation in the evenings and at weekends.

BEd Science programme

Students enter the BEd Science programme through the CAO. The programme code is [CK413](#). Typical CAO points for CK413 are approx. 520. Upon acceptance to the programme, students are required to select one of five possible routes. The routes offered are:

- Biology and Chemistry
- Physics and Mathematics
- Computer Science and Mathematics
- Chemistry and Mathematics
- Computer science and Chemistry

Throughout the programme, our student teachers undergo teaching placement in varied school types in Cork. In first year, our student teachers are placed in a primary school to get a taste of what is involved in teaching science. Students in 2nd, 3rd and 4th year teach in a secondary school. Our students are Garda Vetted in first year and obtain their Teaching Council Number in their third year.

Upon completion of the four year programme, our BEd Science students are qualified to teach two subjects (outlined above) to Leaving Certificate level.

Why are the Colleges of both SEFS and CACSSS so closely involved in the Eureka Centre?

- The BEd Science degree is the main route to qualifying as a science teacher in UCC.
- The School of Education is the lead department in the BEd Science degree.
- Of the 240 credits in the BEd Science programme, 120 credits are taught in SEFS and 120 credits are taught in CACSSS.
- Most of the lab equipment in the Eureka labs and all of the running costs of the Eureka Centre labs and Resource Room are paid by the School of Education.

Support provided by the Eureka Centre to students from disadvantaged backgrounds

The initial proposal for funding to set up the Eureka Centre was made to the Strategic Innovation Fund under the strand of improving access to third level education for student from disadvantaged backgrounds. Hence, we have always worked in close collaboration with the UCC Plus office which carries out all the administration work in liaising with school principals to identify the students who attend the Eureka Centre. Among the activities for these students are:

- Saturday classes and lab practical sessions in Leaving Certificate biology, physics and chemistry. These sessions have a particular exam focus to help students whose parents would not be in a position to obtain grinds (extra tuition) for them. In some cases, these students are studying science subjects on their own as an extra subject as physics and chemistry are not taught in every secondary school.
- Junior Cycle science seminars are run each year to encourage students to choose science subjects for their Leaving Certificate. These one-day events consist of lessons on topics on the Junior Cycle science curriculum, lab sessions in the Eureka labs and chemistry magic shows.
- In some cases, Leaving Cert students are living in conditions which are not conducive to study. Hence, they are allowed to use the Eureka Resource Room to consult textbooks and other resources and to study in the room after school.

International Recognition of the Eureka Centre as a Centre of Excellence

UCC is the only university in Ireland which has received accreditation from the International Council of Associations for Science Education (ICASE) for the high quality of its professional development programme in science education.



The Eureka Centre received this accreditation in 2013. The fact that the Eureka Centre is one of the recognised ICASE Science and Technology Centres at international level is one of the factors leading to UCC to host the World Conference on Science Education in 2026. Without doubt, the closing down of the Eureka Resource Room would have serious consequences for our accreditation and would put a question mark over the commitment to science education displayed by UCC.

Accreditation of BEd Science programme by Teaching Council.

The BEd Science degree was re-accredited by the Teaching Council in 2023. The visiting accreditation panel wrote in glowing terms of the facilities available for training science teachers. The report specifically mentioned the Science Resource Centre and the "wide variety of teaching resources to aid in the preparation of lesson plans" (p. 10).

Our BEd Science Students

The BEd Science degree is a perfect example of a degree programme that involves close collaboration between the colleges of SEFS and CACSSS.

Our science education graduates are among the best ambassadors that we send into our secondary schools. It is these graduates who will encourage a love of science among their pupils and encourage these pupils to come to UCC to study science subjects.