Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

DO YOU WANT TO BE PART OF
"Schrödinger at 75: The Future of Biology International Meeting"?

On 5-6 September 2018 Trinity College Dublin will hold "Schrödinger at 75: The Future of Life" international meeting. The purpose is to mark the 75th anniversary of a series of visionary public lectures entitled "What is Life?" by Nobel laureate, physicist Erwin Schrödinger, who was then Director of Theoretical Physics at the Dublin Institute for Advanced Studies (DIAS). When Schrödinger gave his original lectures in 1943 in Trinity College Dublin, the basis for heredity was the urgent unsolved question. Speakers will address the current burning issues in biology—including the basis of the mind and consciousness, ageing, gene editing, synthetic biology, bioenergetics and the origin of life—and will recapture the spirit of Schrödinger's lectures by exploring the future of biology.

The meeting will build on the strong historical importance of Ireland and Trinity College Dublin in the foundations of 20th century science, and use it as a platform for the world's leading researchers from all areas of biology to set the scientific agenda, as they see it, for the 21st century.

THE ORGANISING COMMITTEE IS HOPING TO ENGAGE TRINITY STUDENTS IN THIS UNIQUE EVENT.

Programme

The 75th anniversary meeting will focus on the future of questions at the centre of life today. Specific themes include systems biology, bioenergetics, brain and mind, memory, consciousness, ageing, human evolution, and artificial intelligence. It will be a two-day scientific meeting accompanied by a major lecture by the renowned philosopher, cognitive scientist, and author Daniel Dennett on the Future of Life. Six Nobel laureates have been confirmed. Please see the programme below.

Audiences

It is expected that the meeting will attract the attendance of high-level delegates from around the world including many notable academics, entrepreneurs, journalists, and leaders of funding organizations. All lectures at the meeting will be recorded and edited to high quality for publication on the internet. Through digital media it will be accessible to wider audiences across the world interested in aspects of life and its essence. We have almost 700 confirmed participants, with a total of 1,000 attendance capacity at the National Concert Hall. We also hope to have student-participants.

Background

In February 1943, Erwin Schrödinger delivered a series of Public Lectures in Ireland entitled "What is Life?" Through these lectures, held at Trinity College Dublin under the auspices of the Dublin

Institute for Advanced Studies, Schrödinger posed the question of how can the workings of living organisms be accounted for by physics and chemistry? These lectures lead to the publication of the historical "What is Life" book in 1944, which stimulated the search for the true material basis of heredity. In this book, Schrödinger offered the radical proposal that the genetic material of all living organisms should be manifest as an aperiodic crystal. This concept lead to the discovery of the DNA double helix by the combined works of James Watson, Francis Crick, Maurice Wilkens, and Rosalind Franklin. Watson and Crick both credited Schrödinger's book with presenting an early theoretical concept of how the storage of genetic information would work, and each acknowledged Schrödinger as the source of inspiration.

The 2018 meeting will recapture the spirit of Schrödinger's original lecture by asking 24 scientists of the highest levels of eminence and impact to speculate about how they see the future of life. This symposium will build on the success of a similar 50th anniversary meeting, held in 1993, where speakers included Stephen Jay Gould, Roger Penrose, Jared Diamond, Manfred Eigen, John Maynard Smith, Gerald Edelman, and Lewis Wolpert.

Student Participation

The organising committee (Luke O'Neill, Mike Murphy, University of Cambridge**,** Cliona O'Farrelly, Tomás Ryan, Trinity College Dublin, Zhanna O'Clery) in consultation with the Student Biochemical Society are hoping to involve students in this unique international meeting and in a special post event – a mini-symposium "Schrödinger at 75: Do we Now Know the Future of Life?" to be held on 5 October in the Schrödinger Lecture at the School of Physics where the original talk was held.

Proposition to Students

We are seeking 24 or more students who are interested in selecting topics of the programme and shadowing the speakers, to become rapporteurs and present their reflections on the talks at the student mini-symposium "Schrödinger at 75: Do we Now Know the Future of Life?" to be held on 5 October in the Schrödinger Lecture Theatre at the School of Physics. **These students will be expected to do the following:**

- Choose a specific talk – 1-2 people will be assigned to each talk by the speaker (see the programme below)
- Provide 300 words why you are interested in the specific topic and would like to be a rapporteur at the student mini-symposium, please send the entry whatislifeat75@tcd.ie **by 15 July**
- Provide the name of an academic who can support your application
- Be ready to present your reflections on the talk at the mini-symposium "Schrödinger at 75: Do We Now Know the Future of Life? **on Friday, 5 October, 15.00 to 18.00**
- **(Optional) Attend a talk to Trinity alumni on the subject of the Schrödinger meeting** by Professor Luke O'Neill, Chair of Biochemistry, Fellow of the Royal Society **"**The biggest riddle of them all: What is Life?' 24 August, 14.00-14.45 Stanley Quek Lecture Theatre

Benefits

- Free registration
- Name in the main meeting and the mini-symposium programme
- Being a student ambassador "minding" the selected speaker over the two-day meeting
- Placement in Trinity student publications

Selection

Selection will be made by the Organising Committee in conjunction with representatives of student societies and students will be informed by 20 July.

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Schrödinger at 75: The Future of Biology
International Meeting
4-6 September 2018

https://www.tcd.ie/biosciences/whatislife/

September 4, 2018 – Trinity College Dublin

5.00pm – 5.50pm Schrödinger – a Poetry Reading (venue: Schrödinger Theatre, School of Physics, Trinity College Dublin)
6.00pm – 7.00pm Welcome Reception, Old Library, Trinity College Dublin

September 5, 2018 – National Concert Hall

Introduction

8.00 – 9.00am	Registration and coffee
9.00 – 9.10am	Introductory Words: Mike Murphy and Luke O'Neill
9.10 – 9.20am	Welcome by Provost of Trinity College Dublin, Patrick Prendergast

Session 1

9.20 – 9.50am	*John O'Keefe* – The Future of the Brain
9.55 – 10.25am	*Kay Tye* – The Future of Emotion
10.30 – 11.00am	*Kathryn Holt* – The Future of Infectious Disease
11.00 – 11.20am	Coffee Break

Session 2

11.20 – 11.50am	*Beth Shapiro* – The Future of Extinction
11.55am – 12.25pm	*Svante Pääbo* – The Future of Ancient DNA
12.30 – 1.00pm	*Linda Buck* – The Future of Perception
1.00 – 2.00pm	Lunch

Session 3

2.00 – 2.30pm	*Karl Deisseroth* – The Future of Brain Editing
2.35 – 3.05pm	*Feng Zhang* – The Future of Gene Editing
3.05 – 3.25pm	Coffee Break

Session 4

3.25 – 3.55pm	*Saul Kato* – The Future of Biological Computation
4.00 – 4.30pm	*Murray Shanahan* – The Future of Artificial Intelligence
4.30 – 4.50pm	Coffee Break

Keynote Lecture

5.00 – 5.50pm	*Daniel Dennett* – The Future of Life

Closing Remarks

5.50 – 6.00pm	*Mark Ferguson* (Science Foundation Ireland)
6.00 – 7.00pm	Drinks Reception

September 6, 2018 - – National Concert Hall

Session 5

9.00 – 9.30am	*Philip Campbell* – The Future of Science Communication
9.35 – 10.05am	*Lydia Lynch* – The Future of Immunology
10.10 – 10.40am	*Nick Lane* – The Future of Bioenergetics
10.40 – 11.00am	Coffee Break

Session 6

11.00 – 11.30am	*Michael Rosbash* – The Future of Fruit Flies & Circadian Biology
11.35 – 12.05pm	*Ottoline Leyser* – The Future of Plant Life
12.10 – 12.40pm	*Leroy Hood* – The Future of Healthcare & Systems Biology
12.40 – 1.45pm	Lunch

Session 7 (ERC Session)

1.45 – 2.15pm	*Bernard Feringa* – The Future of Chemistry
2.20 – 2.50pm	*Ada Yonath* – The Future of Structural Biology
2.55 – 3.25pm	*Linda Partridge* – The Future of Ageing
3.25 – 3.45pm	Coffee Break

Session 8

3.45 – 4.15pm	*Susumu Tonegawa* – The Future of Learning and Memory
4.20 – 4.50pm	*Danielle Bassett* – The Future of Complex Systems
4.55 – 5.25pm	*Michael Gazzaniga* – The Future of Cognitive Neuroscience
5.30 – 5.45pm	Coffee Break

Schrodinger Lecture

(Hosted by Trinity College Dublin, Dublin Institute for Advanced Studies and the Austrian Embassy)

5.50 – 6.30pm	*Christof Koch* – The Future of Consciousness

Closing Remarks

6.30 – 6.40pm	*Werner Nahm (Dublin Institute for Advanced Studies)* *Mike Murphy (University of Cambridge)*
6.45 – 7.45pm	Drinks Reception