

# Alberto Scarampi del Cairo

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[www.scaralbi.com](http://www.scaralbi.com)

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## Objectives

PhD student in Industrial Biotechnology and Bioenergy at the University of Cambridge. Particularly curious about photosynthesis and cyanobacteria.

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## Education

- **Corpus Christi College, University of Cambridge, UK** October 2019 - Present  
**Name of Qualification:** PhD in Industrial Biotechnology and Bioenergy  
**Funding:** awarded a full scholarship from the BBSRC-DTP programme  
**Main Fields of Study:** Synthetic Biology, Biophysics and Biochemistry.
  - **Imperial College London, UK** October 2016 - August 2019  
**Name of Qualification:** BSc and ARCS in Biotechnology  
**Grade:** First Class Honours, Usmani Prize in Biotechnology  
**Main Fields of Study:** Molecular Biology, Biophysics and Biochemistry.
  - **Liceo Scientifico “Galileo Ferraris”, Turin, Italy** 2011 - 2016  
**Name of Qualification:** Diploma di Esame di Stato (high-school diploma)  
**Grade:** 100/100  
**Main Fields of Study:** Chemistry, Biology, Mathematics, Physics, History, Philosophy, History of Art, Italian, German, Latin.
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## Laboratory Skills

- **Basic:** Aseptic techniques (*E. coli*, *S. cerevisiae*), Pipetting, Titration, Spectrophotometry, Light and Fluorescence microscopy
  - **Biochemistry:** Ion-exchange, Gel filtration, Affinity and Reverse Phase Chromatography, SDS and Native PAGE, Immunodetection, Trypsin digestion, *Arabidopsis* GUS staining, MALDI TOF-TOF Mass Spectrometry, Dynamic Light Scattering (DLS), Large Unilamellar Vesicles (LUVs) preparation via extrusion.
  - **Synthetic Biology:** Cell culturing, restriction enzyme digestion, DNA gel electrophoresis, making *E. coli* competent, *E. coli* transformation, PCR, Restriction Enzyme, BioBricks, Golden Gate and BASIC DNA assembly, plate-reader analysis, cyclic voltammetry, amperometry.
  - **Computing/Bioinformatics:** R, Matlab and Python programming, sequence analysis (BLAST, ClustalO, PFAM, Phyre), molecular graphics (PyMol), LaTeX.
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## Research Experience

- **Student Research Scientist** July 2019 - October 2019  
BIOMOD Competition in biomolecular modelling, Imperial College Team [nanodips.io](http://nanodips.io)  
Department of Chemistry, Prof. Oscar Ces lab, Imperial College London
  - Took part in the BIOMOD competition, as part of an interdisciplinary team of 8 undergraduates.
  - Conducted research and refined laboratory skills in the field of DNA nanotechnology and syn-

thetic cells

- Developed a novel design for the assembly of DNA nanopores and synthetic cells for smart drug delivery
- Fundraised  $\approx$  £20.000 to pay for consumables and travel expenses to travel to San Francisco and present the project.

• **Undergraduate Thesis**

February 2019 - June 2019

Center for Systems Biology, Dr. Robert Endres Lab, Imperial College London

- Conducted research in the field of computational biophysics and wrote a 6.000 words thesis by the title "The Paradox of the Plankton: coexistence of structured microbial communities"
- Developed a modelling framework to simulate the growth of microbial consortia in resource-limited and spatially heterogeneous environments.

• **Student Research Scientist**

July 2018 - October 2018

iGEM Competition in Synthetic Biology, Imperial College Team

[pixcell.org](http://pixcell.org)

Department of Bioengineering, Ouldridge and Ledesma-Amaro Lab, Imperial College London

- Developed the first synthetic biology toolkit that enables aerobic electronic control of gene expression.
- Designed and performed plate reader and cyclic voltammetry experiments to demonstrate electronic induction of GFP in liquid and solid cultures of engineered *E. coli*.
- Identified a non-toxic and cheap redox molecule able to act as inducer in electrogenetic devices.
- Constructed a library of electrogenetic parts using the next-generation BASIC DNA assembly method

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## Roles of Responsibility

• **President**

November 2018 - July 2019

Imperial College Synthetic Biology Society (SynBIC)

[synbic.com](http://synbic.com)

- Elected to run the largest university synbio society in the UK.
- Roles include liaising with academics and promoting the synbio community at Imperial.

• **Academic Representative**

October 2018 - July 2019

Imperial College Union

[imperialcollegeunion.org](http://imperialcollegeunion.org)

- Selected to represent biotechnology undergraduates in the department of life sciences.
- Roles include liaising with students and lecturers to improve the academic experience at Imperial College.

• **Treasurer**

March 2018 - November 2018

SynBIC

[synbic.com](http://synbic.com)

- Awarded a £1250 grant from the IC Enterprise Lab to organise the first Biohackaton at the Imperial College's Advanced Hackspace

• **Treasurer**

March 2018 - October 2018

SynBio UK

[synbiouk.com](http://synbiouk.com)

- Developed communication and interpersonal skills as part of the committee of the "federation" of synbio societies across UK universities.
- Collected £9000 from sponsors, which enabled to organise the largest UK-wide iGEM Meetup.

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## Awards and Achievements

- **Usmani Prize in Biotechnology** August 2019  
Faculty of Natural Sciences, Imperial College London [imperial.ac.uk](http://imperial.ac.uk)
  - For annual award to the final year undergraduate student for excellence in Biotechnology.
- **Gold Medal** October 2018  
iGEM Competition, Boston, USA. [iGEM.org](http://iGEM.org)
  - Awarded the highest medal criteria for the project “PixCell: electronic control of gene expression”.
- **Dean’s List, Faculty of Natural Sciences** 2018-2019, 2017-2018 and 2016-2017
  - The Deans List recognises the top 10% of students in each year cohort in each undergraduate programme (140 students) based on academic achievements.
- **Finalist** May 2016  
National Olympiad of Philosophy, Rome, Italy [sfi.it](http://sfi.it)
  - Awarded the third place (among 300) with an epistemological essay on Karl Popper.