Chemistry at Bristol

Dr Jonathan Charmant, Undergraduate admissions tutor

bristol.ac.uk/chemistry
Research excellence: league tables

<table>
<thead>
<tr>
<th>Complete University Guide 2020</th>
<th>Times Good University Guide 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Institution</td>
</tr>
<tr>
<td>1</td>
<td>Cambridge</td>
</tr>
<tr>
<td>2</td>
<td>Liverpool</td>
</tr>
<tr>
<td>3</td>
<td>Oxford</td>
</tr>
<tr>
<td>4</td>
<td>Bristol</td>
</tr>
<tr>
<td>5</td>
<td>Durham</td>
</tr>
</tbody>
</table>
Fellows of the Royal Society

Prof Mike Ashfold FRS
Prof Richard Evershed FRS
Prof Andrew Orr Ewing FRS
Prof Varinder Aggarwal FRS
Prof Stephen Mann FRS
Professor Chris Willis

IUPAC 2019 Distinguished Women in Chemistry Award
Research excellence: facilities

- The breadth and quality of facilities available for carrying out chemistry experiments is outstanding.
- World-class instrumentation is used by undergraduate students.
Research-led teaching

• You will be taught by world-leading academics.

• You will undertake a project with a staff member of your choice in the final year of your course.
Research-led teaching is...

- An integrated approach, where staff and students thrive on the synergy between world-class research and first-class teaching.
- A commitment to excellent teaching by all academic staff.
- Development of new methods of teaching that facilitate and enhance learning.
Teaching excellence: National Student Survey 2019

92% The teaching on my course
77% Assessment and Feedback
91% Organisation and Management
91% Learning Resources
Teaching excellence

You will be taught by chemists who write today’s textbooks:

Professor Jonathan Clayden
Research carried out here is in today’s textbooks

For many years metal-phosphine π-bonding was thought to use phosphorus d-orbitals

Research carried out here showed that bonding occurs through orbitals with a large amount of p-character

Metal-phosphine catalysts are key to many industrial processes
The Wittig reaction

A very useful reaction: forms a new C=C double bond
- For many systems the geometry of the resulting double bond is *cis* (R groups are on same side of the double bond)
- How do we get double bonds with *trans*-geometry?
Wittig reaction: trans products

Stabilised ylides give *trans* products (R groups on opposite sides of molecule)

Mechanism elucidated at Bristol by Aggarwal & Harvey 2005
Teaching excellence: innovation

- Flipped classroom
- Peer-assisted study sessions
- Online learning resources
  - Training videos for labs
  - Lecture capture
  - Bespoke distance learning for year-away students.
World-class teaching laboratories

- State of the art teaching laboratories used exclusively by chemistry students
- Award-winning Dynamic Laboratory Manual
- A unique teaching experience
Placement year options

Study abroad and industrial placements:

• Mentoring and support provided throughout your year away
• Distance learning delivered through the DLM
• Current home/EU students enjoy an 85% discount on year-away tuition fees
Final year project options

Research and Teaching

• Work in a research lab alongside PhD students and research associates

• Work as an undergraduate ambassador in a local school
Final year project choice

• Choose project from 5 research themes
  ▪ Catalysis & Synthesis
  ▪ Chemical & Synthetic Biology
  ▪ Computational Chemistry, Theory and Dynamics
  ▪ Environment & Energy
  ▪ Functional Molecules and Nanomaterials

• Or choose an educational project
  ▪ Work as an undergraduate ambassador in a local school
  ▪ Develop new teaching within the School of Chemistry
Personal support

- Personal tutor
- Senior tutor
- Student wellbeing advisors
- Professional support in student residences
- Dedicated healthcare service
- Disability support
Degree outcomes

85% of chemistry students graduated with upper-second or first-class honours in 2019.
Careers

86% of our 2017 graduates were in work or education six months after graduation.

Destinations of Leavers from Higher Education Survey 2017, response rate 90%
Bristol physical science graduates earn more than most of their Russell Group peers at all points after graduation.*

Median Earnings For Physical Science Graduates

*Longitudinal Education Outcomes Survey, Department for Education 2017
Spin-out companies

• UnitDX
  – science incubator hub
  – set up by Harry Destecroix (former PhD student)

• Ziylo
  – Founded by Prof. Tony Davis
  – Recently acquired by Novo Nordisk in a deal worth up to $800m