School of Chemistry: Overview

- **Core objectives:**
  - Provide high level graduate education & training.
  - Undertake Research in areas of national importance.
  - Underpin the Irish & Global PharmaChem sector.

- **Undergraduate Courses (RSC accredited):**
  - Biopharmaceutical Chemistry B.Sc.
  - Chemistry B.Sc.

- **Research areas:**
  - Analytical Sciences.
  - Biological Chemistry/Natural Products/Drug Discovery.
  - Combustion Chemistry.
  - Synthesis & Mechanisms.

- [www.nuigalway.ie/chemistry/](http://www.nuigalway.ie/chemistry/)
Chemistry: Key Metrics

- **Academic Staff:** 15
  - Emeritus: 7
  - Honorary/Adjunct: 7
- **Postdocs:** 10
- **Research assistants:** 2
- **Technical & Admin:** 11
- **PhD students:** 48
- **MSc students:** 2
- **Undergraduate:** ~1100 (330 FTE)

- **Peer reviewed publications:**
  - 2013: 83
  - 2007-13: 524
- **PhD graduations:**
  - Since 2000: 150+
  - Since 1970: 360+
- **Research Grant Income (2007-onwards):**
  - Total: €27,075,000
  - National: €21,427,000
  - Industrial: €4,485,000
  - EU: €1,162,000
Chemistry: **Expertise & Facilities.**

**Expertise:**
- **Analytical Sciences:**
  - Biopharma process/products.
  - Solid state API analysis.
  - Electrochemistry.
  - Separation/identification of complex natural product mixtures.
- **Combustion Chemistry.**
- **Computational Chemistry.**
- **Natural & Marine products.**
- **Synthesis & Mechanisms:**
  - Organic, Inorganic, polymer.
  - NMR, MS & XRD structural analysis/elucidation.

**Infrastructure (>5M€):**
- 600 (with cryo probe), 500, & 400 MHz NMR.
- 2 x Shock tube & 2 x RCM.
- 4 x Confocal microscopes.
- 4 x Raman spectrometers.
- 5 x FTIR & NIR spectrometers.
- >10 UV-visible.
- GC & GC-MS.
- UPLC-QTOF-MS, LC-MS, HPLC.
- Powder & single crystal X-Ray.
- Thermal (TGA & DSC)
Chemistry: achievements.

- 4 SFI PI grants of >1M€ awarded to staff.
- ~2.5 M€ of funding from Synthesis & Solid State Pharmaceutical Centre (3PIs)
- Involved in 2 EU Initial Training Networks.
- 13 of top 100 authors from NUIG are Chemistry staff.
- PIs in the Beaufort Marine Biodiscovery & Charles Parsons Energy research projects.

Industrial research: Global interactions....e.g.

- **Combustion Chemistry:**
  ~2M€ in funding from Rolls-Royce, Renault, Alstom, Exxon-Mobil, Shell, KAUST, Saudi-Aramco.

- **Nanoscale Biophotonics Lab:**
  >2.7M€ of funding from Bristol-Myers Squibb, Janssen-Biologics, Merck, Agilent, & KOSI.