

# CiQUS

Centro Singular de Investigación  
en Química Biológica e  
Materiais Moleculares

## Conferencia: (Glyco)Materials for Infection and Biologic Storage

**Matthew I. Gibson**

Department of Chemistry and  
Medical School - University of  
Warwick – Reino Unido

**24/06/19**

Aula de Seminarios  
do CIQUS

**12:15h**

Más información:  
[www.usc.es/ciqus](http://www.usc.es/ciqus)

 **Santander**  
Universidades



XUNTA DE GALICIA  
CONSELLERÍA DE CULTURA, EDUCACIÓN  
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**USC**  
UNIVERSIDADE  
DE SANTIAGO  
DE COMPOSTELA

  
**CAMPUS VIDA**  
CAMPUS DE EXCELENCIA INTERNACIONAL

**PROFESSOR MATTHEW GIBSON.**  
**Department of Chemistry and Medical School, University of Warwick, UK**

**PROFESSIONAL APPOINTMENTS**

- 2016 – **Full Professor.** Joint Chair between Department of Chemistry and Warwick Medical School, University of Warwick UK. [*1<sup>st</sup> ever joint position between these Departments*]
- 2015 – 2016 **Associate Professor.** Department of Chemistry, University of Warwick, UK
- 2012 – 2015 **Assistant Professor.** Department of Chemistry, University of Warwick, UK
- 2009 – 2012 **Senior Research Fellow.** (Independent position) University of Warwick, UK
- 2007 – 2009 **Postdoctoral Researcher.** Institute of Materials, Federal Institute of Technology, Lausanne, (EPFL), Switzerland. **Supervisor:** Prof Harm-Anton Klok

**EDUCATION**

- 2003 - 2006 **PhD Research in Macromolecular Chemistry,** University of Durham UK.  
Awarded January 2008. **Supervisor:** Prof. Neil R. Cameron
- 1999 - 2003 **MChem.** 1<sup>st</sup> Class Honors. University of Durham, UK

**RESEARCH STATEMENT**

*My research is focused on the development and application of novel macromolecules which can be applied to global healthcare challenges. This makes use of organic, polymer and carbohydrate chemistries but always with a focus on the analytical science to enable a quantitative understanding to be developed. This has been applied to diverse challenges spanning the control of ice crystal growth, cellular cryopreservation, point of care infectious disease diagnostics, and antimicrobials.*

**SELECTED AWARDS**

- 2018 ACS Biomacromolecules/Macromolecules Young Investigator Prize
- 2016 Fellow of the Royal Society of Chemistry (FRSC)
- 2015 Polymers for Advanced Technology Young Talent Prize.
- 2015 Dextra Medal for Carbohydrate Science. Royal Society of Chemistry
- 2014 ERC Starting Grant Awardee
- 2014 Emerging Technologies Prize (Life Sciences). Royal Society of Chemistry
- 2012 MacroGroupUK Young Researchers Medal. Royal Society of Chemistry

**PUBLICATION SUMMARY**

117 Journal Publications, 2 Book Chapters, 5 recent publications;

- 1] Guy, C., Gibson, M.I., Fullam E.C., *Chemical Science*, **2019**, DOI: 10.1039/C9SC00415G, 'Targeting extracellular glycans: tuning multimeric boronic acids for pathogen-selective killing of Mycobacterium tuberculosis'
- 2] Mitchell, DE., Deller, RC., Fayter, AC., Hasan, M., Gutierrez-Marcos, J., Gibson, M.I., *Materials Horizons*, **2019**, 6, 364 – 368, 'Ice-Recrystallization Inhibiting Polymers Protect Proteins Against Freeze-Stress and Enable Glycerol-Free Cryostorage'
- 3] Blackman, LD., Varlas, S., Arno, M.C., Houston, Z., Fletcher, N., Thurecht, K, Hasan, M., Gibson M.I., and O'Reilly, R.K. *ACS Central Science*, **2018**, 4, 718-723 'Confinement of therapeutic enzymes in selectively permeable polymer vesicles by polymerization-induced self-assembly (PISA) reduces antibody binding and proteolytic susceptibility'
- 4] Graham, B., Fayter, AER, Houston, J.E., Evans, R.C., Gibson M.I., *Journal of the American Chemical Society*, **2018**, 140, 5682-5685, 'Facially Amphiphathic Glycopolymers Inhibit Ice Recrystallization'
- 5] Graham, B., Bailey, T.L., Healey, J.R., Marcellini, M., Deville, S., Gibson, M. I., *Angewandte Chemie*, **2017**, 56, 15941–15944, 'Polyproline as a Minimal Antifreeze Protein Mimic That Enhances the Cryopreservation of Cell Monolayers'

**RESEARCH AND SUPERVISION TRACK RECORD**

- Group is comprised of 15 PhDs, 7 PDRA and several undergraduate/masters students.
- 15 PhDs have graduated from the lab
- Diverse funding portfolio from government, charity, EU, Industry.
- 6 Submitted Patents and 1 granted.