

J. L. KIAPPES, JR.

DEPARTMENT OF CHEMISTRY • 20 GORDON STREET • LONDON WC1H 0AJ • UK

CURRENT ROLES

- **Lecturer (Teaching)**
Department of Chemistry, University College London, London, UK
January 2022 – Present
Associate Lecturer (Teaching); February 2021 – December 2021
 - Development and implementation of new teaching strategies including workshops and automating personalized feedback
 - Leading redesign of first-year organic curriculum
 - Programme Director for MRes in Organic Chemistry: Drug Discovery
 - Module Organiser for third-year synthetic practical courses
 - Teaching of organic chemistry and chemical biology to undergraduate and postgraduate students
- **Stipendiary Lecturer in Organic Chemistry and Biochemistry, Acting Organising Tutor for Biochemistry**
Corpus Christi College, Oxford, UK
September 2015 – August 2017 (Lecturer), September 2017 – Present (Acting Organising Tutor)
- **Stipendiary Lecturer in Biochemistry**
Trinity College, Oxford, UK
September 2022 – Present

PREVIOUS ROLES

- **Lerner-Fink Fellow in Medicinal Chemistry**
Oxford Glycobiology Institute, Department of Biochemistry, University of Oxford, Oxford, UK
September 2014 – February 2021
 - Design, synthesis and evaluation of enzyme inhibitors and novel antivirals; experience with drug design, organic synthesis, enzymology, biophysical techniques for ligand binding (NMR, thermal shift assay, TR-FRET), protein expression and purification.
- **Non-stipendiary Lecturer in Organic Chemistry and Biochemistry**
Lincoln College, Oxford, UK
September 2020 – July 2021

EDUCATION

- **Postgraduate Certificate in Teaching and Learning in Higher Education, Distinction**
Portfolio: *Teaching at the Interface of Chemistry and Biochemistry*
Centre for Teaching and Learning, University of Oxford, Oxford, UK
Also awarded Fellowship of the Higher Education Academy (April 2022)
January 2021 – January 2022
- **DPhil in Biochemistry and PhD in Organic Chemistry**
Thesis: *Synthesis and Biological Characterization of Natural and Designed Sugars*
Lincoln College, University of Oxford, Oxford, UK
The Scripps Research Institute, La Jolla, USA
August 2008 – August 2014
- **B.S. in Chemistry (A.C.S. Certified), Summa Cum Laude, Wiess College of Natural Sciences**
Rice University, Houston, USA; Summa Cum Laude awarded to top 5% of graduating class

August 2004 – May 2008

AWARDS AND ACHIEVEMENTS

- Vice Chancellor's Education Award, 'Working It Out' Team, University of Oxford (2022)
- UCL Education Award for Team Excellence in Innovation and Transformation, Lab Bootcamp Team, University College London (2022)
- MAPS Faculty Education Award for Team Excellence, Chemistry Connected Learning Team, Faculty of Mathematical and Physical Sciences, University College London (2022)
- Excellent Teacher, Medical Sciences Division, University of Oxford (2019)
- Early Career Excellent Teacher, Medical Sciences Division, University of Oxford (2017)
- Oxford University Glycobiology-Unither Virology Award (2014)
- Lincoln College Senior Scholarship (2012 – 2013)
- American Chemical Society Leadership Development Award (2010)
- Skaggs-Oxford Fellowship, University of Oxford and Scripps Research Institute (2008 – 2014)
- National Science Foundation Graduate Research Fellowship, NSF (2008 – 2013)
- Zevi and Bertha Salsburg Memorial Award in Chemistry, Rice University (2008)
- George Holmes Richter Memorial Fellowship in Chemistry, Rice University (2007)
- Arthur L. Draper Award in Chemistry, Rice University (2007)
- Silver Medalist at International Chemistry Olympiad (2004)

TEACHING EXPERIENCE

- **University College London, London, UK**

Organisation

Programme Director for MRes in Organic Chemistry: Drug Discovery

Module Organiser for CHEM0008 (First-year organic chemistry) and CHEM0048 (Drug Discovery Research Project)

Laboratory Organiser for CHEM0024 (Third-year synthesis labs)

Departmental Teaching Committee (2021 – present)

Departmental Staff-Student Consultation Committee (2021 – present)

Teaching

Lectures for CHEM0005 (Chemical Foundations), CHEM0008 (First-year organic chemistry), CHEM0010/11 (Chemistry for Biology Students)

Tutorials for organic chemistry (all years)

Laboratory demonstrator for organic labs (all years)

Supervision of four final-year masters and two summer intern students

- **University of Oxford, Oxford, UK**

College Teaching

Departmental Teaching Steering Committee (2020 – 2021); Departmental Teaching Committee (2014 – present)

Lecturer (Corpus Christi College, MT 2015 – present; Acting Co-Organising Tutor MT 2017 – present; Trinity College, MT 2022 – present; Lincoln College, MT 2020 – TT 2021)

Organic Chemistry (Tutorials; various colleges, MT 2013 – present)

Aromatic and Heterocyclic Pharmaceutical Chemistry Supplementary Subject (Tutorials; various colleges, MT 2018 – present)

Departmental Teaching

Organic Chemistry (Course Organiser, Practical Lead Demonstrator, workshops and lectures; Department of Biochemistry, MT 2016 – TT 2020)

Mechanistic Biochemistry (Course Developer, Course Organiser, Practical Lead Demonstrator, workshops and lectures; Department of Biochemistry, MT 2020 – TT 2021)

Carbohydrate Chemistry (Lectures; Department of Biochemistry, HT 2015 – present)

Biological Chemistry Classes Coordinator (Department of Biochemistry, LV 2019 – TT 2021)

Organic Chemistry Examiner (Department of Biochemistry, 2019 – present)

Preparing for Teaching and Learning in Oxford- training programme for tutors and class teachers (Course Organiser, lectures and discussion leader, 2019 – 2021)

TEACHING EXPERIENCE, University of Oxford, Oxford, UK (*cont.*)

Organic Chemistry, Intensive Course for postgrads (Course Organiser and lectures; Doctoral Training Centre, 2016 – 2018)

Bench supervision of fourteen final-year masters and five summer intern students

Outreach and Access

Opportunity Oxford (Tutor and Practical Lead Demonstrator, 2020 – *present*)

Uniq School in Biochemistry (Co-coordinator, 2016 – 2018; Lead Demonstrator and tutorials, 2017 – 2019)

Summer Foundation Course in Chemistry (Tutor, Somerville College, 2019)

Sutton Trust Summer School (Lead Demonstrator, 2017)

▪ **International Chemistry Olympiad**

Chair of International Steering Committee (*July 2023 – present*)

International Steering Committee (*July 2008 – July 2012, July 2016 – July 2021, July 2022 – present*)

Member of Scientific Committee for the 44th IChO (2010 – 2012) and 48th IChO (2016)

Member of United Kingdom delegation (Mentor, 2020 – *present*)

Member of United States delegation (Head Mentor, 2011; Scientific Observer, 2007 – 2010)

▪ **UK Chemistry Olympiad, UK**

Member of Olympiad Working Group of RSC (*October 2018 – present*)

▪ **US Chemistry Olympiad, US Air Force Academy, Colorado Springs, USA**

Head Mentor (2011), Peer Mentor (2006 – 2008)

▪ **The Scripps Research Institute, La Jolla, USA**

Outreach Program for High School teachers and students (Lecturer and Head Demonstrator, 2009 – 2010)

Mentor for summer interns (undergraduates and high school students, 2009 – 2010)

▪ **Department of Chemistry, Rice University, Houston, USA**

Honors Organic Chemistry Teaching Assistant (*Fall 2005 – Spring 2008*)

General Chemistry Teaching Assistant (*Spring 2007, Spring 2008*)

RESEARCH EXPERIENCE

▪ **Postdoctoral Graduate Research Assistant, University of Oxford, Oxford, UK**

Advisor: Prof. N. Zitzmann, Department of Biochemistry (*January 2011 – August 2014*)

- Synthesis and evaluation of novel broad-spectrum antivirals
- Experience in synthesis of iminosugars, cell and virus culture, antiviral screening development, enzymology

▪ **Graduate Research Assistant, The Scripps Research Institute, La Jolla, California, USA**

Advisor: Prof. K.C. Nicolaou, Department of Chemistry (*August 2008 – January 2011*)

- Synthesis of the carboline disaccharide domain of shishijimicin A
- Experience in sugar synthesis

▪ **Undergraduate Research Assistant, Rice University, Houston, Texas, USA**

Advisor: Prof. James M. Tour, Department of Chemistry (*August 2006 – May 2008*)

PEER-REVIEWED PUBLICATIONS

12. *N*-Substituted Valiolamine Derivatives as Potent Inhibitors of Endoplasmic Reticulum α -Glucosidases I and II with Antiviral Activity; S. S. Karade, M. L. Hill, **J. L. Kiappes**, R. Manne, B. Aakula, N. Zitzmann, K. L. Warfield, A. M. Treston, R. A. Mariuzza; *J. Med. Chem.* 64(24), 18010–24 (2021).
11. Assessing Antigen Structural Integrity through Glycosylation Analysis of the SARS-CoV-2 Viral Spike; J. Brun, S. Vasiljević, B. Gangadharan, M. Hensen, A. V. Chandran, M. L. Hill, **J. L. Kiappes**, R. A. Dwek, D. S. Alonzi, W. B. Struwe, N. Zitzmann; *ACS Cent. Sci.* 7(4), 586–93 (2021).

PEER-REVIEWED PUBLICATIONS (cont.)

10. Targeting ER α -glucosidase I with a single-dose iminosugar treatment protects against lethal influenza and dengue virus infections; K. L. Warfield, D. S. Alonzi, J. Hill, A. T. Caputo, **J. L. Kiappes**, N. Sheets, M. Duchars, R. Dwek, J. Biggins, D. L. Barnard, S. Shresta, A. Treston, N. Zitzmann; *J. Med. Chem.* 63(8), 4205–14 (2020).
9. ToP-DNJ, a Selective Inhibitor of Endoplasmic Reticulum α -Glucosidase II Exhibiting Antiflaviviral Activity; **J. L. Kiappes**, M. L. Hill, D. S. Alonzi, J. L. Miller, R. Iwaki, A. C. Sayce, A. T. Caputo, A. Kato, N. Zitzmann; *ACS Chem. Biol.* 13(1), 60–5 (2018).
8. Essential chemistry for biochemists; A. L. Jonsson, M. A. J. Roberts, **J. L. Kiappes**, K. A. Scott; *Essays Biochem.* 61(4), 401–27 (2017).
7. Structures of mammalian ER α -glucosidase II capture the binding modes of broad-spectrum iminosugar antivirals; A. T. Caputo, D. S. Alonzi, L. Marti, I. B. Reza, **J. L. Kiappes**, W. B. Struwe, A. Cross, S. Basu, E. D. Lowe, B. Darlot, A. Santino, P. Roversi, N. Zitzmann; *Proc. Natl. Acad. Sci. U. S. A.* 113(32), E4630–8 (2016).
6. Iminosugars Inhibit Dengue Virus Production via Inhibition of ER Alpha-Glucosidases—Not Glycolipid Processing Enzymes; A. C. Sayce, D. S. Alonzi, S. S. Killingbeck, B. E. Tyrrell, M. L. Hill, A. T. Caputo, R. Iwaki, K. Kinami, D. Ide, **J. L. Kiappes**, P. R. Beatty, A. Kato, E. Harris, R. A. Dwek, J. L. Miller, N. Zitzmann; *PLoS Negl. Trop. Dis.* 10(3), e0004524 (2016).
5. Inhibition of endoplasmic reticulum glucosidases is required for in vitro and in vivo dengue antiviral activity by the iminosugar UV-4; K. L. Warfield, E. M. Plummer, A. C. Sayce, D. S. Alonzi, W. Tang, B. E. Tyrrell, M. L. Hill, A. T. Caputo, S. S. Killingbeck, P. R. Beatty, E. Harris, R. Iwaki, K. Kinami, D. Ide, **J. L. Kiappes**, A. Kato, M. D. Buck, K. King, W. Eddy, M. Khaliq, A. Sampath, A. M. Treston, R. A. Dwek, S. G. Enterlein, J. L. Miller, N. Zitzmann, U. Ramstedt, S. Shresta; *Antiviral Res.* 129, 93–8 (2016).
4. Isolation and SAR Studies of Bicyclic Iminosugars from *Castanospermum australe* as Glycosidase Inhibitors; A. Kato, Y. Hirokami, K. Kinami, Y. Tsuji, S. Miyawaki, I. Adachi, J. Hollinshead, R. J. Nash, **J. L. Kiappes**, N. Zitzmann, J. K. Cha, R. J. Molyneux, G. W. J. Fleet, N. Asano; *Phytochem.* 111, 124–31 (2015).
3. Synthesis of the Carboline Disaccharide Domain of Shishijimicin A; K. C. Nicolaou, **J. L. Kiappes**, W. Tian, V. B. Gondi, J. Becker; *Org. Lett.* 13(15), 3924–7 (2011).
2. Synthesis of Fluorescent Dye-Tagged Nanomachines for Single-Molecule Fluorescence Spectroscopy; G. Vives, J. M. Guerrero, J. Godoy, S. Khatua, Y.-P. Wang, **J. L. Kiappes**, S. Link, J. M. Tour; *J. Org. Chem.* 75(19), 6631–43 (2010).
1. Synthesis of a Porphyrin-Fullerene Pinwheel; T. Sasaki, A. J. Osgood, **J. L. Kiappes**, K. F. Kelly, J. M. Tour; *Org. Lett.* 10(7), 1377–80 (2008).

OPEN-ACCESS PUBLICATIONS

2. Open Science Discovery of Oral Non-Covalent SARS-CoV-2 Main Protease Inhibitors Therapeutics; COVID Moonshot Consortium including **J. L. Kiappes**; *bioRxiv* 2020.10.29.339317, doi: <https://doi.org/10.1101/2020.10.29.339317> (2020).
1. SARS CoV-2 Cellular Tracker; J. Brun, M. L. Hill, **J. L. Kiappes (joint first author)**, A. von Delft, C. Gileadi, V. Rangel, and N. Zitzmann; <http://sarscov2.assaytracker.net/results/> (2020).

BOOK CHAPTERS

5. **J. L. Kiappes*** and S. F. Jenkinson. (2021) Working It Out: Adapting Organic Chemistry Workshops to an Online Environment in *Advances in Online Chemistry Education* (Eds. E. Pearsall, K. Mock, M. Morgan, and B. Tucker), ACS eBooks, United States of America.
4. **J. L. Kiappes***. (2021) Using Mobile Phone Applications to Teach and Learn Organic Chemistry in *Technology-enabled Blended Learning Experiences for Chemistry Education and Outreach* (Eds. F. M. Fung and C. D. Zimmermann), Elsevier, Netherlands.
3. **J. L. Kiappes** and C. A. Saber. (2019) Selection and Preparation of the United States Delegation to the IChO in *10 Things You Must Know About International Chemistry Olympiad: A Guide to the IChO Competition* (Eds. F. M. Fung and I.-J. Chang), Chang-Xin Cultural and Creative Marketing, Taiwan.

BOOK CHAPTERS (*cont.*)

2. A. T. Caputo, D. S. Alonzi, **J. L. Kiappes**, W. B. Struwe, A. Cross, S. Basu, B. Darlot, P. Roversi, and N. Zitzmann. (2018) Structural Insights into the Broad-Spectrum Antiviral Target Endoplasmic Reticulum Alpha-Glucosidase II in *Dengue and Zika: Control and Antiviral Treatment Strategies* (Eds. R. Hilgenfeld and S. Vasudevan). *Advances in Experimental Medicine and Biology: Volume 1062*, Springer, Singapore.
1. S. Ching, D. Prieto-Centurion, **J. L. Kiappes**, and K. H. Whitmire. (2014) Bis[Bis(Triphenylphosphoranylidene)Ammonium] Undecacarbonyltriferrate⁽²⁻⁾, in *Inorganic Syntheses: Volume 36* (Eds. G. S. Girolami and A. P. Sattelberger), John Wiley & Sons, Inc., Hoboken, NJ, USA.

CONFERENCE PRESENTATIONS

9. International Chemistry Olympiad tasks: Classroom tools and insights into assessment design; **J. L. Kiappes**; Talk at Biennial Conference on Chemical Education, West Lafayette, USA, August 2022.
8. Collaborative workshops in introductory organic chemistry: Empowering students to solve chemical biology research questions; **J. L. Kiappes**; Talk at Biennial Conference on Chemical Education, West Lafayette, USA, August 2022.
7. Bringing Chemical Biology to First-Year Organic Chemistry: Adapting Workshops to Remote and Online Contexts; **J. L. Kiappes**; Talk at 9th European Variety in University Chemistry Education Conference, Ljubljana, Slovenia, July 2021.
6. Online and Hybrid Workshops: Collaborative Problem Solving and Peer-to-Peer Learning; **J. L. Kiappes**; Talk at Oxford Teaching and Learning Showcase, Oxford, United Kingdom, June 2021.
5. Online and Hybrid Workshops: Collaborative Problem Solving and Peer-to-Peer Learning; **J. L. Kiappes**; Talk at UCL Education Conference, London, United Kingdom, April 2021.
4. Bringing chemical biology into introductory organic chemistry: onsite and online collaborative workshops; **J. L. Kiappes**; Talk at ACS Spring National Meeting, San Antonio, USA, April 2021.
3. The IChO Turns 50: The History and Future of the International Chemistry Olympiad; **J. L. Kiappes**, G. Magyarfalvi, P. Holzhauer; Invited talk at 25th Biennial Conference on Chemical Education, South Bend, USA, August 2018.
2. Antivirals in Stereo: Structure Activity Relationships of Iminosugars in Three Dimensions; **J. L. Kiappes**, J. L. Miller, M. Hill, A. Kato, R. A. Dwek, N. Zitzmann; Talk at Third Antivirals Conference, Amsterdam, Netherlands, October 2014.
1. Chemistry Olympiad: Perspectives as a Student and Mentor; **J. L. Kiappes**; Invited talk at 21st Biennial Conference on Chemical Education, Denton, USA, August 2010.

PATENT APPLICATIONS

2. Glycolipid Inhibition Using Iminosugars; T. Butters, D. Alonzi, S. Pollock, P. Laing, **J. L. Kiappes**, N. Zitzmann, R. A. Dwek; U.S. Patent Application 61929704, 2014.
1. Novel Iminosugars and Their Applications; **J. L. Kiappes**, P. Laing, R. A. Dwek, N. Zitzmann; U.S. Patent Application 61656265, 2012.

DOCTORAL THESIS EXAMINING

External Examiner

A. Subratti. *Synthesis of Carbohydrate Derivatives: A Focus on Protecting Group Strategies and Phosphoramidate Chemistry* (Supervisor: Dr N. K. Jalsa). University of the West Indies (2020).

ORGANIZATIONS

American Chemical Society (Affiliate: 2004 – 2008; Member: 2008 – present); Royal Society of Chemistry (Higher Education Group Committee Member: 2021 – present; Member: 2020 – present; Associate Member: 2009 – 2020); Biochemical Society (Member: 2012 – present); International Younger Chemists Network (Member and Public Outreach Committee: 2020 – 2022); Phi Beta Kappa; Phi Lambda Upsilon (Chemistry Honor Society); Lovett College Society of Academic Fellows (Head Fellow: 2006 – 2008); Rice University Chemistry Department Curriculum Committee (2006 – 2007).

TRAINING COURSES

- Effective Online Course Design (Oxford University Continuing Education, 2020)
- Introduction to Molecular Modeling in Drug Discovery (Schrödinger, 2020)
- Innovation in Teaching Practice: Creativity in Online Teaching (HEA, 2020)
- Innovation in Teaching Practice: Gamification (HEA, 2020)
- Online Teaching: Creating Courses for Adult Learners (Open University, 2021, *Merit*)

OTHER SKILLS

Proficiency in Microsoft Office, Prism, Virtual Learning Environments (e.g Weblearn and Canvas). Familiarity with LaTeX and Schrödinger Maestro and LiveDesign. Interest in languages (German B1+, French B1, Japanese A2+, Greek A2+, Serbian A2+).