Christopher Viney

Resume

Current Appointments at the University of California, Merced, USA

July 2003: Professor of Engineering (appointed as one of the eight first founding members of the University's faculty). Tenured, Full Professor position, currently at Step V.
January 2008: Vice Provost for Undergraduate Education.

Previous Employment

- **Heriot-Watt University, Edinburgh, UK**:
  Professor of the Chemistry of Materials, and Head of Section for the Chemistry of Materials; Chemistry (December 1998 to July 2003). Also:
  - Deputy Head of Chemistry (August 1999 to July 2002).
  - Head of Chemistry, and Member of the School Management Group; School of Engineering and Physical Sciences (August 2002 to July 2003).
  - Elected Member of the Heriot-Watt University Court, and of the Finance Committee of Court (August 2000 to July 2003).
- **University of Oxford, UK**:
  University Lecturer in the Department of Materials, and Tutorial Fellow in Materials at St Catherine's College (February 1995 to December 1998).
- **University of Washington, Seattle, USA**:
  - Associate Professor (with tenure), Center for Bioengineering, and Adjunct Associate Professor, Department of Materials Science & Engineering, (September 1993 to January 1995).
  - Assistant Professor, Center for Bioengineering, and Adjunct Assistant Professor, Department of Materials Science & Engineering (December 1990 to September 1993).
  - Assistant Professor, Department of Materials Science & Engineering (December 1987 to December 1990).
- **IBM Almaden Research Center, San Jose, USA**:
  World Trade Visiting Scientist (September 1986 to September 1987).
- **University of Cambridge, UK**:
  - Postdoctoral Research Fellow, Department of Metallurgy & Materials Science (October 1983 to September 1986).
  - Lector in Engineering / Materials Science, Trinity College (January 1984 to September 1986).

Principal Research Experience

Scope

Biomolecular materials (interdisciplinary design of materials synthesis, assembly, processing, and physical property optimization strategies based on examples from Nature).

Physical science / engineering of polymers and liquid crystals (relationship between chemical structure, molecular order and properties; phase transformations and processing of thermotropic and lyotropic macromolecules; natural polymers and their derivatives).

Techniques

Light and electron microscopy, small- and wide-angle x-ray diffraction, computer modeling, thermal analysis, static and dynamic mechanical property characterization.

Degrees

- PhD (1983), Trinity College and Dept. of Metallurgy & Materials Science, University of Cambridge, UK. Dissertation: *Microstructural Aspects of Liquid Crystalline Polymers*. Advisor: Dr A.H. Windle.
- BA (1980), Trinity College and Dept. of Metallurgy & Materials Science, University of Cambridge, UK. Graduated with First Class Honours. MA (1984) conferred by right.

Professional Accreditation

CSci (2004); the Science Council, London, UK.
CChem, FRSC (1999); the Royal Society of Chemistry, London, UK.
CPhys, MInstP (1986); CPhys, FInstP (1999); the Institute of Physics, London, UK.

Professional Organizations

- **Royal Society of Chemistry**, London: Fellow; Chartered Chemist.
- **Institute of Physics**, London: Fellow; Chartered Physicist.
  - Committee Member, Polymer Physics Group (March 1999 to September 2003).
- **Materials Research Society**: Member.
  - Fall 1992 Symposium on *Biomolecular Materials*; Co-Organizer and lead Proceedings Editor.
  - Fall 1994 Symposium on *Characterization and Properties of Defects in Ordered Polymers*; Co-Organizer.
  - Fall 2004 Symposium on *Mechanical Properties of Bioinspired and Biological Materials*; Co-Organizer and lead Proceedings Editor.
  - Fall 2006 Symposium on *Mechanics of Biological and Bioinspired Materials*; Co-Organizer and lead Proceedings Editor.
- (Electron) **Microscopy Society of America**: Member.
  - 1991 Symposium on *Confocal Microscopy and 3-D Imaging*. Co-Organizer.
  - 1992 Symposium on *Microscopy of Small-Molecule and Polymeric Liquid Crystals*; Organizer.
- **ASM International**, Materials Park, Ohio: Fellow.
  - University of Washington Chapter: Adviser to Students 1989–1990.
  - Puget Sound Chapter:
    Executive Committee 1989-94.
    Treasurer 1990-91 (Chapter awarded 5-star status).
    Vice-Chairman 1991-92 (Chapter awarded 5-star status).
    Chairman 1992-93 (Chapter awarded 5-star status).
  - International:
    Member of 1994 Nominating Committee.
    Elected to 2000 Class of Fellows.
    Member, Materials Education Foundation Board of Trustees, 2005–2007.
- **American Chemical Society**: Member.
- **Sigma Xi, The Scientific Research Society**: Life Member.

- *International Workshops on Silks* (University of Virginia, Charlottesville).
  - *First International Workshop* (January 1993); Co-Organizer.
  - *Second International Workshop* (June 1998); Co-Organizer.
- *TAC 97* (combining the *Second UK National Thermal Analysis & Calorimetry Symposium* and *Thermal Analysis of Advanced Materials II*; University of Oxford, April 1997); Co-organizer.
- *EuroConferences on High Performance Fibers*.
  - *Fiber Fracture* (Cala Viñas, Majorca, Spain, October 2000); Vice Chairman.
  - *Self-Assembling Fibrous Materials* (Bad Herrenalb, Germany, September 2002); Chairman.

Editorial Boards and Activities

- *International Journal of Biological Macromolecules* (Elsevier, Amsterdam):
  - Senior Editor (Europe, Asia, Africa, Australia), March 1999 to June 2003.
  - Guest Co-Editor of March / April 1999 issue (v.24, nos 2,3).
  - Member of International Advisory Board, July 1995 to Feb. 1999.
- *Biorheology* (IOS Press, Amsterdam): member of Board of Editors, since July 1993.
- *MRS Bulletin* (Materials Research Society, Pittsburgh): Guest Editor of Sept. 1995 issue (v.20, no.9).
- *Institute of Materials* (London): member of Books Committee (formerly University Books Subcommittee), Dec. 1995 to Dec. 2005.
- *Bioengineering of Materials* (monograph series published by Birkhaüser, Boston): member of Editorial Advisory Board, since Dec. 1996.
- *Thermochimica Acta* (Elsevier, Amsterdam): Guest Editor of 5 May 1998 issue (v.315, no.1).
- *Current Opinion in Solid State and Materials Science* (Elsevier, Amsterdam): Guest Editor of March 2004 issue (v.8, no.2).

Honors and Awards

- Resolution *"to commend and recognize Dr. Christopher Viney for his outstanding volunteer community services within Merced County"* presented by the Merced County Superintendent of Schools. The resolution's observations include: "*Professor Viney is able to explain very complex natural processes and the behavioral properties of materials in terms that any audience can understand"* and *"Professor Viney teaches with enthusiasm and a passion for exciting students of all ages about engineering professions"* (April 2008).
- Honored by the Merced County Board of Supervisors in their 2008 Volunteer of the Year Recognition Program.

  Honorable Mention for Community Service as Speaker for Local Service Clubs and Coordinator for UC Staff Lectures at Challenger Center of Science Education.

  Certificates of Recognition were presented on behalf of the Merced County Board of Supervisors, the California State Assembly, the California State Senate, and the US House of Representatives (April 2008).
- Inaugural recipient of the Science Communicator Award, presented by the University of California at Merced Chapter of Sigma Xi, the Scientific Research Society (April 2008).

  Recognizing Outstanding and Unique Lectures, Presentations and Articles for Public Audiences, and a Long-Term Commitment to Science Communication.
- A poster presentation "Microstructure, Nanostructure and Properties of the Wasp Petiole" by Emily J. Reed and Christopher Viney won a first place award in the undergraduate research poster competition at UC Merced's First Annual Research Day (April 2007). It also won a first place award in the "Interdisciplinary Research" category at the Seventh Annual Sigma Xi Student Research Conference (Orlando, Florida, Nov. 2007).
- Air Force Association (Major General Charles I. Bennett, Jr. Chapter, Merced, CA): Chapter Award recognizing collaborative educational outreach activities (October 2006).

  The Chapter earned the California AFA Distinguished Achievement Award for Aerospace Education in 2006.

- UC Merced Faculty of the Year 2005-2006, presented by Student Affairs at the Inaugural University Awards Gala (May 2006).
- Elected to ASM International Materials Education Foundation Board of Trustees (2005 – 2007).
- Honorary Professor of Materials Chemistry, in the School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, UK (Aug. 2003 - present).
- Walker Memorial Lecture, University of Edinburgh (Jan. 2002).
- UK Millennium Science, Engineering & Technology Student of the Year Awards: supervised winner of the Rolls-Royce Award for the Best Materials Student of 2000. (Prizes awarded to Heriot-Watt University and to project student.)
- Elected Fellow of ASM International (June 2000).

  For significant contributions to the understanding of structure-property-processing relationships in biomaterials and for leadership in materials education.
- 1999 Interdisciplinary Award, Royal Society of Chemistry (March 2000).

  Distinguished for research into biomolecular materials, polymers and liquid crystals.
- Invited Professor, Escuela de Ciencia e Ingeniería de los Materiales «Eduardo Torroja», Universidad Internacional Menéndez Pelayo, Santander, Spain (July 1998, July 2001 and July 2002).
- Campaign for Real Thermal Analysis Award, Thermal Methods Group, Royal Society of Chemistry (April 1997).
- Tutorial Fellowship, St Catherine's College, Oxford, UK (Feb. 1995 to Dec. 1998).
- Affiliate Professor, Center for Bioengineering, University of Washington, Seattle, USA. (Associate, Feb. 1995 - Sept. 1999; Full, Sept. 1999 - present).
- Elected to ASM International 1994 Nominating Committee (Dec.1993).
- Distinguished Teaching Award, University of Washington, Seattle, USA (April 1992).
- 3M Nontenured Faculty Grant Award (for research; three awards 1991, 1992 and 1993).
- Research Fellowship, Darwin College, Cambridge, UK (Oct. 1983 to Sept. 1986).
- Research Scholarship, Trinity College, Cambridge, UK (Oct. 1980 to Sept. 1983).
- Tripos Prize, Trinity College, Cambridge, UK (June 1980).
- Entrance Exhibition, Trinity College, Cambridge, UK (Oct. 1977 to Sept. 1979).
- G.A. Reynolds Entrance Scholarship at University of Cape Town, South Africa (Jan. 1977).
- Cape Provincial Administration Bursary, Cape Province, South Africa (for performance in 1976 Senior Certificate Examination; placed second in Cape Province).

Other Skills and Interests

Fluent in German and Afrikaans; good reading knowledge of Dutch; attempting to learn scientific and conversational Spanish; award-winning professional photography (nature, architecture); hiking; music (choral, classical organ); history; science outreach.

Personal

[redacted] [redacted]
Place of Birth: Skegness, Lincolnshire, UK
Nationality: US (by naturalization) and UK (by birth)

Christopher Viney

Technical Publications

---

1. C. Viney and A.H. Windle, "Phase Transformations in the Thermotropic Liquid Crystal Polymer: 60/40 PABA/PET", *Journal of Materials Science* 17(9):2661-2670, 1982.
DOI: 10.1007/BF00543902

2. A.M. Donald, C. Viney and A.H. Windle, "Banded structures in oriented thermotropic polymers", *Polymer* 24(2):155-159, 1983.

3. C. Viney, A.M. Donald and A.H. Windle, "Optical Microscopy of Banded Structures in Oriented Thermotropic Polymers", *Journal of Materials Science* 18(4):1136-1142, 1983.
DOI: 10.1007/BF00551982

4. C. Viney, G.R. Mitchell and A.H. Windle, "Optical microstructure of oriented liquid crystal polymers", *Polymer Communications* 24:145-146, 1983.

5. C. Viney, "Cutting thin specimens with a sledge microtome", *Laboratory Practice* 32:87, 1983.

6. C. Viney, "Ultimate Optical Resolving Power when Conoscopic Image Contains no Zero- or Even-Order Maxima", *Microscope* 32:93-99, 1984.

7. C. Viney, A.M. Donald and A.H. Windle, "Molecular Correlations in Sheared Thermotropic Copolyesters Showing Banded Textures", *Polymer* 26(6):870-878, 1985.

8. C. Viney, "Your Cup of Tea?", *SNIPPETS* (The Institute of Physics, London) no.8, Spring 1985, pg.7; continued in *SNIPPETS* no.9, Autumn 1985, pg.8; *SNIPPETS* no.10, Winter 1986, pg.10. **Invited**.

9. C. Viney, G.R. Mitchell and A.H. Windle, "Biaxial Optical Properties of Thermotropic Random Copolyesters", *Molecular Crystals and Liquid Crystals* 129:75-108, 1985.

10. A.M. Donald, C. Viney and A.H. Windle, "Domains and Walls in Thermotropic Liquid Crystal Polymers: an Optical Microscopy Study", *Philosophical Magazine B* 52(5):925-941, 1985.
DOI: 10.1080/01418638508241883

11. A.H. Windle, C. Viney, R. Golombok, A.M. Donald and G.R. Mitchell, "Molecular Correlation in Thermotropic Copolyesters", *Faraday Discussions of the Chemical Society* 79:55-72, 1985.
Also various discussion contributions: pp. 103-104; 105-106; 228 and three accompanying plates; 286-287.

12. C. Viney and A.H. Windle, "Reconstituted Nitrocellulose with Significant Molecular Alignment", *Journal of Materials Science Letters* 5:516-518, 1986.

13. A.M. Donald, C. Viney and A.P. Ritter, "The Parabolic Focal Conic Texture in a Lyotropic Liquid Crystalline Polymer", *Liquid Crystals* 1:287-300, 1986.

14. C. Viney and A.H. Windle, "Ternary Phase Equilibria for a Nitrocellulose / Solvent / Non-Solvent System", *Liquid Crystals* 1:379-396, 1986.

15. C. Viney, "Using the Optical Microscope to Characterize Molecular Ordering in Polymers", *Polymer Engineering and Science* 26:1021-1032, 1986. **Invited**.

16. C. Viney and A.H. Windle, "On Predicting the Optical Diffraction Pattern from Thermotropic Specimens having a Banded Texture", *Polymer* 27:1325-1331, 1986.

17. C. Viney and A.H. Windle, "On Understanding the Optical Extinction Behaviour of Uniaxially Sheared Liquid Crystalline Polymers", *Philosophical Magazine A* 55:463-480, 1987.

18. C. Viney and A.H. Windle, "Lyotropic Behaviour of Nitrocellulose", *Molecular Crystals and Liquid Crystals* 148:145-161, 1987.

19. C. Viney and A.H. Windle, "Molecular Ordering in Nitrocellulose", Chapter 8 in *Wood and Cellulosics: Industrial Utilisation, Biotechnology, Structure and Properties* (Edited by J.F. Kennedy, G.O. Phillips and P.A. Williams), Ellis Horwood, Chichester UK, 1987, pp.77-84.

20. C. Viney, "Optical Resolution Criteria for Polydomain Anisotropic Materials", *Microscope* 36:35-47, 1988.

21. D.Y. Yoon, C. Viney, S.P. Parkin, B. Reck and H. Ringsdorf, "Phase Behavior and Molecular Order in a semi-flexible Thermotropic/Lyotropic Polymer", *ACS Polymer Preprint* 29(1):484-485, 1988.

22. W.G. Rees and C. Viney, "On Cooling Tea and Coffee", *American Journal of Physics* 56:434-437, 1988.

23. C. Viney, B. Marcher and L.L. Chapoy, "The Effect of a Magnetic Field on Optical Orientation: a Test for Biaxiallity in a Nematic Polymer?", *Molecular Crystals and Liquid Crystals* 162B:283-299, 1988.

24. C. Viney, "Optical Microscopy for Studying Molecular Ordering in Polymers", in *Encyclopedia of Engineering Materials* (Edited by N.P. Cheremisinoff), Marcel Dekker, New York, 1988, Part A, Vol.1, pp.505-536. Re-published in *Handbook of Polymer Science and Technology* (Edited by N.P. Cheremisinoff), Marcel Dekker, New York, 1989, Vol.1, pp.505-536. **Invited**.

25. J. Economy, W. Volksen, C. Viney, R. Geiss, R. Siemens and T. Karis, "The Nature of the Thermal Transitions in Poly(*p*-oxybenzoate)", *Macromolecules* 21:2777-2781, 1988.

26. C. Viney, T.P. Russell, L.E. Depero and R.J. Twieg, "Transitions to Liquid Crystalline Phases in a Semifluorinated Alkane", *Molecular Crystals and Liquid Crystals* 168:63-82, 1989.

27. C. Viney, "Crystallinity and Ordered Structures in Polymers: Concepts and Challenges", Proceedings of Du Pont Polymer Products Department 1989 Technical Conference, vol.1, pp. 1.1 - 1.19. **Invited**.

28. C. Viney, "Liquid Crystalline Polymer Textures near the Resolution Limit of the Light Microscope", in *Proceedings of the 47th Annual Meeting of the Electron Microscopy Society of America* (Edited by G.W. Bailey), San Francisco Press, San Francisco, 1989, pp.332-333. **Invited**.

29. C. Viney and W.S. Putnam, "On Resolving Fine Periodic Microstructures in the Optical Microscope", in *Proceedings of the 47th Annual Meeting of the Electron Microscopy Society of America* (Edited by G.W. Bailey), San Francisco Press, San Francisco, 1989, pp.364-365.

30. C. Viney, "Light Microscopy of Liquid Crystalline Polymers", *ACS Polymer Preprints* 30(2):511-512, 1989. **Invited**.

31. L.A. Chick, C. Viney and I.A. Aksay, "Liquid Crystal-Like Phase Separation in Systems of Macroscopic Rods", in *The Materials Science and Engineering of Rigid Rod Polymers* (MRS Symposium Proceedings, vol. 134; Edited by W.W. Adams, R.K. Eby and D.E. McLemore), Materials Research Society, Pittsburgh, 1989, pp.27-32.

32. L.A. Chick, C. Viney and I.A. Aksay, "Packing and Structure in Systems Containing Rod-Like Particles", in *Processing Science of Advanced Ceramics* (MRS Symposium Proceedings, vol. 155; Edited by I.A. Aksay, G.L. McVay and D.R. Ulrich), Materials Research Society, Pittsburgh, 1989, pp.331-342.

33. C. Viney, D.Y. Yoon, B. Reck and H. Ringsdorf, "Phase Behavior of a Semiflexible Polymer with both Thermotropic and Lyotropic Properties", *Macromolecules* 22: 4088-4093, 1989.

34. C. Viney, R.J. Twieg, T.P. Russell and L.E. Depero, "The Structural Basis of Transitions Between Highly Ordered Smectic Phases in Semifluorinated Alkanes", *Liquid Crystals* 5:1783-1788, 1989.

35. D.Y. Yoon, N. Masciocchi, L.E. Depero, C. Viney and W. Parrish, "High Temperature Structures of Poly(*p*-hydroxybenzoic acid)", *Macromolecules* 23:1793-1799, 1990.

36. C. Viney, R.J. Twieg and T.P. Russell, "Liquid Crystalline Phases formed by Iodine Derivatives of Semifluorinated Alkanes", *Molecular Crystals and Liquid Crystals* 182B:291-297, 1990.

37. C.M. Dannels and C. Viney, "Factors Affecting Microstructural Scale in Liquid Crystalline Polymers", in *Electron Microscopy 1990: Proceedings of the XIIth International Congress for Electron Microscopy* (Edited by L.D. Peachey and D.B. Williams), San Francisco Press, San Francisco, 1990, vol.4, pp.220-221.

38. W.S. Putnam and C. Viney, "Observing the Relaxation of Molecular Orientation in Sheared Liquid Crystalline Polymer Solutions", in *Electron Microscopy 1990: Proceedings of the XIIth International Congress for Electron Microscopy* (Edited by L.D. Peachey and D.B. Williams), San Francisco Press, San Francisco, 1990, vol.4, pp.1092-1093.

39. C. Viney and L.A. Chick, "Modelling Microstructure in Materials that Contain Anisotropic Particles", in *Multifunctional Materials* (MRS Symposium Proceedings, vol. 175; Edited by A.J. Buckley, G. Gallagher-Daggitt, F.E. Karasz and D.R. Ulrich), Materials Research Society, Pittsburgh, 1990, pp.371-378.

40. C. Viney, "Light Microscopy of Liquid Crystalline Polymers", in *Liquid Crystalline Polymers* (ACS Symposium Series, vol.435; Edited by R.A. Weiss and C. Ober), American Chemical Society, Washington DC, 1990, pp.241-255. **Invited**.

41. C. Viney, *Transmitted Polarised Light Microscopy* (monograph; volume 20 in *The Microscope* Series; 185pp.), McCrone Research Institute, Chicago IL, 1990.

42. C. Viney, R.J. Twieg, C. Dannels and M.Y. Chang, "Nematic phases of rigid rod polytolans", *Molecular Crystals and Liquid Crystals Letters* 7:147-151, 1990.

43. K. Kerkam, C. Viney*, D. Kaplan and S. Lombardi, "Liquid Crystallinity of Natural Silk Secretions", *Nature* 349:596-598, 1991.

44. C. Viney and C. Dannels, "Characterizing the Scale of Liquid Crystalline Textures: Rheinberg Differential Color Contrast", *Molecular Crystals and Liquid Crystals* 196: 133-143, 1991.

45. C. Viney, R.J. Twieg, B.R. Gordon and J.F. Rabolt, "Transitions to liquid crystalline phases in tri-block oligomers $F(CF_2)_n(CH_2)_m(CF_2)_nF$", *Molecular Crystals and Liquid Crystals* 198:285-289, 1991.

46. C. Dannels, C. Viney*, R.J. Twieg and M.Y. Chang, "Factors affecting microstructural scale in liquid crystalline materials", *Molecular Crystals and Liquid Crystals* 198:341-350, 1991.

47. W.S. Putnam and C. Viney, "Effect of processing variables on banded textures in hydroxypropyl cellulose solutions", *Molecular Crystals and Liquid Crystals* 199:189-195, 1991.

48. L.A. Chick and C. Viney, "Entropy of rodlike particles: continuum versus lattice representations", *Molecular Crystals and Liquid Crystals* 204:123-132, 1991.

49. B.L. Thiel and C. Viney, "Temperature Effects on Orientation-Dependent EXELFS", in *Proceedings of the 49th Annual Meeting of the Electron Microscopy Society of America* (Edited by G.W. Bailey and E.L. Hall), San Francisco Press, San Francisco, 1991, pp.714-715.

50. D.J. Ray, R.M. Laine, C. Viney and T.R. Robinson, "SiO_2 as a Source of Si Containing Compounds / Polymers", *ACS Polymer Preprints* 32(3):550-551, 1991.

51. K. Kerkam, D. Kaplan, S. Lombardi and C. Viney, "Liquid Crystalline Characteristics of Natural Silk Secretions", in *Materials Synthesis Based on Biological Processes* (MRS Symposium Proceedings, vol. 218; Edited by M. Alper, P. Calvert, R. Frankel, P. Rieke and D. Tirrell), Materials Research Society, Pittsburgh, 1991, pp.239-244.

52. C.M. Dannels and C. Viney, "How Light Microscopy Reveals Molecular Order in Liquid Crystalline Polymers", *Polymer News* 16:293-302, 1991. **Invited**.

53. C. Viney, "Light Microscopy of Self-Assembling Biological Macromolecules", *ACS Polymer Preprints* 33(1):757-758, 1992. **Invited**.

54. C. Viney, "Polymers for Multifunctional Applications: Some General Considerations", in *Inorganic and Organometallic Polymers with Special Properties* (Edited by R.M. Laine), Kluwer Academic Publishers, Dordrecht, 1992, pp.3-15. **Invited**.

55. C. Viney, "Characterizing the Microstructure of New Polymers", in *Inorganic and Organometallic Polymers with Special Properties* (Edited by R.M. Laine), Kluwer Academic Publishers, Dordrecht, 1992, pp.395-410. **Invited**.

56. R.M. Laine and C. Viney, "Inorganic and Organometallic Polymers with Special Properties: Progress, Potential and Problems", in *Inorganic and Organometallic Polymers with Special Properties* (Edited by R.M. Laine), Kluwer Academic Publishers, Dordrecht, 1992, pp.413-435.

57. L.A. Chick, C. Viney and I.A. Aksay, "Phase Separation and Clustering in Systems of Rodlike Particles", in *Ultrastructure Processing of Advanced Materials* (Edited by D.R. Uhlmann and D.R. Ulrich), Wiley Interscience, New York, 1992, pp.201-209.

58. C. Viney, "Use of Light Microscopy in the Qualitative and Quantitative Study of Liquid Crystalline Order", in *Proceedings of the 50th Annual Meeting of the Electron Microscopy Society of America* (Edited by G.W. Bailey, J. Bentley and J.A. Small), San Francisco Press, San Francisco, 1992, pp.264-265.

59. R. Sinicki and C. Viney, "Human Gallstones: Specimen Preparation and Light Microscopy", in *Proceedings of the 50th Annual Meeting of the Electron Microscopy Society of America* (Edited by G.W. Bailey, J. Bentley and J.A. Small), San Francisco Press, San Francisco, 1992, pp.734-735.

60. C. Viney, K. Kerkam, L.K. Gilliland, D.L. Kaplan and S. Fossey, "Molecular Order in Spider Silk Secretions", in *Complex Fluids* (MRS Symposium Proceedings, vol. 248; Edited by E.B. Sirota, D. Weitz, T. Witten and J. Israelachvili), Materials Research Society, Pittsburgh, 1992, pp.89-94.

61. D.L. Kaplan, S. Fossey, C.M. Mello, S. Arcidiacono, K. Senecal, W. Muller, S. Stockwell, R. Beckwitt, C. Viney and K. Kerkam, "Biosynthesis and Processing of Silk Proteins", *MRS Bulletin* 17(10):41-47, 1992. **Invited**.

62. D.L. Kaplan, S. Fossey, C. Viney and W. Muller, "Self-Organization (Assembly) in Biosynthesis of Silk Fibers - A Hierarchical Problem", in *Hierarchically Structured Materials* (MRS Symposium Proceedings, vol. 255; Edited by I.A. Aksay, E. Baer, M. Sarikaya and D.A. Tirrell), Materials Research Society, Pittsburgh, 1992, pp.19-29. **Invited**.

63. C. Viney, "The Nature and Role of Liquid Crystalline Order in Silk Secretions", in *Structure, Cellular Synthesis and Assembly of Biopolymers* (Edited by Steven T. Case), Springer Verlag, Berlin, 1992, pp.255-278. **Invited**.
(Alternative citation: *Results and Problems in Cell Differentiation* 19:255-278, 1992.)

64. D.J. Ray, R.M. Laine, T.R. Robinson and C. Viney, "Thermotropic and Lyotropic Copolymers of Bis(Dioxyphenyl) Silanes", *Molecular Crystals and Liquid Crystals* 225:153-165, 1993.

65. L.A. Chick and C. Viney, "Transitions to Ordered Phases in Systems Containing Rodlike Particles: I. A New Continuum Monte Carlo Approach", *Molecular Crystals and Liquid Crystals* 226:25-40, 1993.

66. L.A. Chick and C. Viney, "Transitions to Ordered Phases in Systems Containing Rodlike Particles: II. Continuum Monte Carlo Approach versus Discrete Lattice Models", *Molecular Crystals and Liquid Crystals* 226:41-61, 1993.

67. L.A. Chick and C. Viney, "Transitions to Ordered Phases in Systems Containing Rodlike Particles: III. Four Fundamental Reasons for the Predictive Deficiencies of Discrete Lattice Models", *Molecular Crystals and Liquid Crystals* 226:63-86, 1993.

68. C. Viney, "Metallic Grain Growth", in *Magill's Survey of Science: Applied Science* (Edited by M.R. Weller), Salem Press, Pasadena, 1993, pp.1627-1634.

69. C. Viney, "Optical Characterization", in *Magill's Survey of Science: Applied Science* (Edited by M.R. Weller), Salem Press, Pasadena, 1993, pp.1884-1891.

70. C. Viney, "Synthetic Detergents", in *Magill's Survey of Science: Applied Science* (Edited by M.R. Weller), Salem Press, Pasadena, 1993, pp.2569-2576.

71. C. Viney, D.J. Brown, C.M. Dannels and R.J. Twieg, "High Strength Disclinations in a Rigid Rod Nematic Polytolane", *Liquid Crystals* 13:95-100, 1993.

72. C. Viney, A.E. Huber and P. Verdugo, "Liquid Crystalline Order in Mucus", *Macromolecules* 26:852-855, 1993.

73. C. Viney, "Nature Makes a Material Difference", *MRS Bulletin* 18(4):4-5, 1993. **Invited**.

74. C. Viney, A.E. Huber, D.L. Dunaway, S.T. Case and D.L. Kaplan, "Processing Natural and Reconstituted Silk Solutions Under Equilibrium and Non-Equilibrium Conditions", in *Biomolecular Materials* (MRS Symposium Proceedings, vol. 292; Edited by C. Viney, S.T. Case and J.H. Waite), Materials Research Society, Pittsburgh, 1993, pp.211-217.

75. C. Viney, S.T. Case and J.H. Waite (Editors), *Biomolecular Materials* (MRS Symposium Proceedings, vol. 292; 288pp.), Materials Research Society, Pittsburgh, 1993.

76. C. Viney, "Processing and Microstructural Control: Lessons from Natural Materials", *Materials Science and Engineering R: Reports* 10:187-236, 1993. **Invited**.

77. B. Thiel, D. Kunkel and C. Viney, "EELS Observations on Natural Silk Fibers", *Microbeam Analysis* 2:S268-S269, 1993.

78. C. Viney, A. Huber and P. Verdugo, "Processing Biological Polymers in the Liquid Crystalline State", in *Biodegradable Polymers and Packaging* (Edited by C. Ching, D.L. Kaplan, and E.L. Thomas), Technomic Publishing Co., Lancaster PA, 1993, pp.209-224. **Invited**.

79. C. Viney and W.S. Putnam, "Characterization of Sheared Liquid Crystalline Polymers by Light Microscopy", in *Proceedings of the 51st Annual Meeting of the Microscopy Society of America* (Edited by G.W. Bailey and C.L. Rieder), San Francisco Press, San Francisco, 1993, pp.864-865. **Invited**.

80. D.L. Kaplan, W.W. Adams, B.L. Farmer and C. Viney, "Silk: Biology, Structure, Properties, and Genetics", in *Silk Polymers – Materials Science and Biotechnology* (ACS Symposium Series, vol.544; Edited by D.L. Kaplan, W.W. Adams, B.L. Farmer and C. Viney), American Chemical Society, Washington DC, 1994, pp.2-16.

81. C. Viney, A.E. Huber, D.L. Dunaway, K. Kerkam and S.T. Case, "Optical Characterization of Silk Secretions and Fibers", in *Silk Polymers – Materials Science and Biotechnology* (ACS Symposium Series, vol.544; Edited by D.L. Kaplan, W.W. Adams, B.L. Farmer and C. Viney), American Chemical Society, Washington DC, 1994, pp.120-136.

82. D.B. Gillespie, C. Viney and P. Yager, "Raman Spectroscopic Analysis of the Secondary Structure of Spider Silk Fiber", in *Silk Polymers – Materials Science and Biotechnology* (ACS Symposium Series, vol.544; Edited by D.L. Kaplan, W.W. Adams, B.L. Farmer and C. Viney), American Chemical Society, Washington DC, 1994, pp.155-167.

83. D.L. Kaplan, W.W. Adams, B.L. Farmer and C. Viney (Editors), *Silk Polymers – Materials Science and Biotechnology* (ACS Symposium Series, vol.544; 380pp.), American Chemical Society, Washington DC, 1994.

84. A.E. Huber, P.S. Stayton, C. Viney* and D.L. Kaplan, "Liquid Crystallinity of a Biological Polysaccharide: the Levan / Water Phase Diagram", *Macromolecules* 27:953-957, 1994.

85. B.L. Thiel, D. Kunkel and C. Viney, "Physical and Chemical Microstructure of Spider Dragline: A Study by Analytical Transmission Electron Microscopy", *Biopolymers* 34:1089-1097, 1994.
See also item no. 98 below.

86. B. Thiel, D. Kunkel, K. Guess and C. Viney, "Composite Microstructure of Spider (*Nephila clavipes*) Dragline", in *Biomolecular Materials by Design* (MRS Symposium Proceedings, vol. 330; Edited by M. Alper, H. Bayley, D. Kaplan and M. Navia), Materials Research Society, Pittsburgh, 1994, pp.21-30. **Invited.**

87. A.E. Huber, D.L. Kaplan and C. Viney, "Liquid Crystallinity of Levan / Water / Starch Solutions", *Journal of Environmental Polymer Degradation* 2:195-199, 1994. **Invited.**

88. D.B. Gillespie, B.L. Thiel, K.A. Trabbic, C. Viney and P. Yager, "Structural Investigation of $(Ad\ II)_{26}$ Fiber, a Novel Bioengineered Material Based on a Viral Spike Protein", *Macromolecules* 27:6177-6182, 1994.

89. A. Sellinger, R.M. Laine, V. Chu and C. Viney, "Palladium- and Platinum-Catalyzed Coupling Reactions of Allyloxy Aromatics with Hydridosilanes and Hydridosiloxanes: Novel Liquid Crystalline / Organosilane Materials", *Journal of Polymer Science: Part A: Polymer Chemistry* 32:3069-3089, 1994.

90. C. Viney and W.S. Putnam, "The Banded Microstructure of Sheared Liquid Crystalline Polymers", *Polymer* 36:1731-1741, 1995. **Invited.**

91. D.L. Dunaway, B.L. Thiel, S.G. Srinivasan and C. Viney, "Characterizing the Cross-Sectional Geometry of Thin, Non-Cylindrical, Twisted Fibers (Spider Silk)", *Journal of Materials Science* 30:4161-4170, 1995.

92. B.L. Thiel and C. Viney, "Hierarchical Molecular Order in Silk Secretions and Fibers", in *Industrial Biotechnological Polymers* (Edited by C.G. Gebelein and C.E. Carraher, Jr.), Technomic Publishing Co., Lancaster PA, 1995, pp.221-248. **Invited.**

93. B.L. Thiel and C. Viney, "A Non-Periodic Lattice Model for Crystals in *Nephila clavipes* Major Ampullate Silk", *MRS Bulletin* 20(9):52-56, 1995.

94. P. Nguyen, G. Lesley, C. Dai, N.J. Taylor, T.B. Marder*, V. Chu, C. Viney*, I. Ledoux and J. Zyss, "Well-Defined Conjugated Rigid-Rods as Multifunctional Materials: Linear and Nonlinear Optical Properties and Liquid Crystalline Behavior", in *Applications of Organometallic Chemistry in the Preparation and Processing of Advanced Materials* (Edited by J.F. Harrod and R.M. Laine), Kluwer Academic Publishers, Dordrecht, 1995, pp.333-347. **Invited**.

95. D.L. Dunaway, B.L. Thiel and C. Viney, "Tensile Mechanical Property Evaluation of Natural and Epoxide-Treated Silk Fibers", *Journal of Applied Polymer Science* 58:675-683, 1995.

96. R.J. Twieg, V. Chu, C. Nguyen, C.M. Dannels and C. Viney, "Tolane Oligomers: Model Thermotropic Liquid Crystals", *Liquid Crystals* 20:287-292, 1996.

97. C. Viney, "Smart Assembly of Polymer Fibres: Lessons from Major Ampullate Silk", in *Smart Structures and Materials 1996: Smart Materials Technologies and Biomimetics* (Edited by A. Crowson), Proc. SPIE 2716:292-295, 1996. **Invited**.

98. B.L. Thiel and C. Viney, "ß Sheets and Spider Silk", *Science* (letters section) 273:1480-1481, 1996.

99. C. Viney, "Natural Silks: Archetypal Supramolecular Assembly of Polymer Fibres", *Supramolecular Science* 4:75-81, 1997. **Invited**.
(This journal is now incorporated into *Materials Science and Engineering: C*)

100. B.L. Thiel and C. Viney, "Spider Major Ampullate Silk (Drag Line): smart composite processing based on imperfect crystals", *Journal of Microscopy* 185:179-187, 1997. **Invited**.

101. C. Viney, "Liquid Crystalline Phase Behavior of Proteins and Polypeptides", in *Protein-Based Materials* (Edited by K. McGrath and D. Kaplan), Birkhäuser, Boston, 1997, pp.281-311. **Invited**.

102. A.E. Huber and C. Viney, "Chimeric Liquid Crystallinity: Noncovalent Association of DNA and Bacterial Levan", *Macromolecules* 30:2662-2670, 1997.

103. B.L. Thiel, K.B. Guess and C. Viney, "Non-Periodic Lattice Crystals in the Hierarchical Microstructure of Spider (Major Ampullate) Silk", *Biopolymers* 41:703-719, 1997.

104. A.E. Huber and C. Viney, "Supramolecular Liquid Crystallinity: Spherical Coils of Levan Surrounding Cylindrical Rods of DNA", *Physical Review Letters* 80:623-626, 1998.

105. J. Pérez-Rigueiro, C. Viney, J. Llorca y M. Elices, "Un modelo para el estudio de los materiales biológicos: la seda", *Anales de Mecánica de la Fractura* 15:267-272, 1998.

106. J.M. Davies and C. Viney, "Mucin-Water Phases: conditions for mucus liquid crystallinity", *Thermochimica Acta* 315:39-49, 1998.

107. K.B. Guess and C. Viney, "Thermal Analysis of Major Ampullate (Drag Line) Spider Silk: the effect of spinning rate on tensile modulus", *Thermochimica Acta* 315:61-66, 1998.

108. N. Sharma, P. Kelly, D. Carr and C. Viney, "Modelling the Ballistic Performance of Body Armour Using a Finite Difference Code", in *Personal Armour Systems Symposium 98*

(Edited by P.L. Gotts and P.M. Kelly), DCTA S&TD Proceedings (Colchester, UK) 98/02:259-288, 1998.

109. J. Pérez-Rigueiro, C. Viney, J. Llorca and M. Elices, "Silkworm Silk as an Engineering Material", *Journal of Applied Polymer Science* 70:2439-2447, 1998.

110. C. Viney and R.A. Fenton, "Physics and Gel Electrophoresis: using terminal velocity to characterize molecular weight", *European Journal of Physics* 19:575-580, 1998.

111. S. Carmichael and C. Viney, "Molecular order in spider major ampullate silk (dragline): effects of spinning rate and post-spin drawing", *Journal of Applied Polymer Science* 72:895-903, 1999.

112. J. Pérez-Rigueiro, C. Viney, J. Llorca y M. Elices, "Influencia del medio en las propiedades mecánicas de la seda", *Anales de Mecánica de la Fractura* 16:430-434, 1999.

113. J.Y.J. Barghout, B.L. Thiel and C. Viney, "Spider (*Araneus diadematus*) Cocoon Silk: a Case of Non-Periodic Lattice Crystals with a Twist?", *International Journal of Biological Macromolecules* 24:211-217, 1999.

114. S. Carmichael, J.Y.J. Barghout and C. Viney, "The Effect of Post-Spin Drawing on Spider Silk Microstructure: a Birefringence Model", *International Journal of Biological Macromolecules* 24:219-226, 1999.

115. C. Viney and L.K. Gilliland, "Gel Electrophoresis of Biological Macromolecules", in *Modern Techniques for Polymer Characterisation* (Edited by R.A. Pethrick and J.V. Dawkins), John Wiley & Sons, Chichester, 1999, pp.287-315. **Invited**.

116. D. Brown and C. Viney, "New Materials", in *Biotechnology: The Science and the Business (Second Edition)* (Edited by D.G. Springham, V. Moses and R.E. Cape), Harwood Academic Publishers, Amsterdam, 1999, pp.351-366. **Invited**.

117. C. Dai, P. Nguyen, T.B. Marder, A.J. Scott, W. Clegg and C. Viney, "Control of Single Crystal Structure and Liquid Crystal Phase Behaviour via Arene-Perfluoroarene Interactions", *Chemical Communications* 1999, Issue 24, pp.2493-2494.

118. S.W. Watt, I.J. McEwen and C. Viney, "Stability of Molecular Order in Silkworm Silk", *Macromolecules* 32:8671-8673, 1999.

119. C. Viney, "Mucus Liquid Crystallinity: is function related to microstructural domain size?", *Biorheology* 36:319-323, 1999.

120. N. Sharma, D. Carr, P. Kelly and C. Viney, "Modelling and Experimental Investigation into the Ballistic Behaviour of an Ultra High Molecular Weight Polyethylene / Thermoplastic Rubber Matrix Composite", in *Proceedings of the 12th International Conference on Composite Materials* (ICCM-12, Paris, July 1999), paper 915 (10 pages), ISBN 2-9514526-2-4 (CD-ROM, January 2000).

121. C. Joseph and C. Viney, "Electrical-Resistance Curing of Carbon-Fibre / Epoxy Composites", *Composites Science and Technology* 60:315-319, 2000.

122. J. Pérez-Rigueiro, C. Viney, J. Llorca and M. Elices, "Mechanical Properties of Single-Brin Silkworm Silk", *Journal of Applied Polymer Science* 75:1270-1277, 2000.

123. J.P. Craven, R. Cripps and C. Viney, "Evaluating the silk/epoxy interface by means of the Microbond Test", *Composites Part A: Applied Science and Manufacturing* 31:653-660, 2000.

124. E. Renuart and C. Viney, "Biological Fibrous Materials: Self-Assembled Structures and Optimised Properties", in *Structural Biological Materials* (Edited by M. Elices), Pergamon / Elsevier Science, Oxford, 2000, pp. 221-267. **Invited**.

125. C. Viney, "Silk Fibres: Origins, Nature and Consequences of Structure", in *Structural Biological Materials* (Edited by M. Elices), Pergamon / Elsevier Science, Oxford, 2000, pp. 293-333. **Invited**.

126. J.Y. Barghout, C. Viney and J.T. Czernuszka, "Characterisation of Spider (*Araneus diadematus*) Cocoon Silk Fibres", in *Proceedings of the 12th European Congress on Electron Microscopy* (EUREM volume 1: Biological Sciences, edited by S. Cech and R. Janisch), Czechoslovak Society for Electron Microscopy, 2000, pp. 509-510.
Also: ISBN 80-238-5503-4 (CD-ROM, 2000).

127. J. Pérez-Rigueiro, C. Viney, J. Llorca and M. Elices, "Mechanical Properties of Silkworm Silk in Liquid Media", *Polymer* 41:8433-8439, 2000.

128. F. Gray and C. Viney, "Packing of spheres around rods in supramolecular aggregates", *European Journal of Physics* 21:609-615, 2000.

129. C. Viney, "From Natural Silks to New Polymer Fibres", *Journal of the Textile Institute* 91(3):2-23, 2000. **Invited** contribution to special issue on *Technologies for a New Century*.

130. F.N. Braun and C. Viney, "Fluctuation-entanglement mechanism for director anchoring at nematic polymer surfaces", *Physical Review E* 63:031708, 2001 (4 pages).

131. J.Y.J. Barghout, J.T. Czernuszka and C. Viney, "Multiaxial Anisotropy of Spider (*Araneus diadematus*) Cocoon Silk Fibres", *Polymer* 42:5797-5800, 2001.

132. C. Viney, "New Polymers from our Oldest Suppliers: Building on 4 Billion Years of Research", in *Polymer '01. The New Polymers: Design, Development & Applications* (Edited by J. Watts), IoM Communications, London, 2001, pp. 1-7. **Invited**.

133. I.J. McEwen, S. Watt and C. Viney, "The effect of concentration on the rate of formation of liquid crystal and crystalline phases", *Polymer* 42:6759-6764, 2001.

134. J. Pérez-Rigueiro, M. Elices, J. Llorca and C. Viney, "Tensile properties of *Attacus atlas* silk submerged in liquid media", *Journal of Applied Polymer Science* 82:53-62, 2001.

135. C. Viney, "Natural Protein Fibers", in *Encyclopedia of Materials: Science and Technology* (Edited by K.H.J. Buschow, R.W. Cahn, M.C. Flemings, B. Ilschner, E.J. Kramer and S. Mahajan), Pergamon / Elsevier Science, Oxford, 2001, vol.6, pp. 5948-5957. **Invited**.

136. J. Trancik, J.T. Czernuszka, C. Merriman and C. Viney, "A simple method for orienting silk and other flexible fibres in transmission electron microscopy specimens", *Journal of Microscopy* 203(3):235-238, 2001.

137. J. Pérez-Rigueiro, M. Elices, J. Llorca and C. Viney, "Tensile properties of silkworm silk obtained by forced silking", *Journal of Applied Polymer Science* 82:1928-1935, 2001.

138. J. Pérez-Rigueiro, M. Elices, J. Llorca and C. Viney, "Tensile properties of *Argiope trifasciata* drag line silk obtained from the spider's web", *Journal of Applied Polymer Science* 82:2245-2251, 2001.

139. C. Viney, "Material Facts about Chemistry", *Studying Science & Engineering in Britain* 2(4):26-27, 2001. **Invited**.

140. M.A. Garrido, M. Elices, C. Viney and J. Pérez-Rigueiro, "Active control of spider silk strength: comparison of drag line spun on vertical and horizontal surfaces", *Polymer* 43:1537-1540, 2002.

141. C. Viney, "New materials from Nature's chemists", *Education in Chemistry* 39:15-17 and 20, 2002. **Invited**.

142. J. Pérez-Rigueiro, M. Elices, J. Llorca and C. Viney, "Effect of degumming on the tensile properties of silkworm (*Bombyx mori*) silk fiber", *Journal of Applied Polymer Science* 84:1431-1437, 2002.

143. F.I. Bell, I.J. McEwen and C. Viney, "Supercontraction stress in wet spider dragline", *Nature* 416:37, 2002.
DOI: 10.1038/416037a

144. M. Struthers, G. Rosair, J. Buckman and C. Viney, "The Physical and Chemical Micro-structure of the *Achatina fulica* Epiphragm", *Journal of Molluscan Studies* 68:165-171, 2002.

145. M.A. Garrido, M. Elices, C. Viney and J. Pérez-Rigueiro, "The variability and inter-dependence of spider drag line tensile properties", *Polymer* 43:4495-4502, 2002.

146. J. Buckman and C. Viney, "The effect of a commercial extended egg albumen on the microstructure of icing", *Food Science and Technology International* 8(2):109-115, 2002.

147. F.N. Braun and C. Viney, "Sliding friction of nematic elastomers", *Journal of Physics: Condensed Matter* 14:6771-6775, 2002.

148. C. Viney, "Fracture of Natural Polymeric Fibres", in *Fiber Fracture* (Edited by M. Elices and J. Llorca), Elsevier Science, Oxford, 2002, pp. 303-328. **Invited**.

149. R.A. Pethrick and C. Viney (Editors), *Techniques for Polymer Organisation and Morphology Characterisation* (243pp.), John Wiley & Sons, Chichester UK, 2003.

150. F.N. Braun and C. Viney, "Modelling self assembly of natural silk solutions", *International Journal of Biological Macromolecules* 32:59-65, 2003.

151. C. Smith, J. Ritchie, F.I. Bell, I.J. McEwen and C. Viney, "Creep and low strength of spider dragline subjected to constant loads", *Journal of Arachnology* 31:421-424, 2003.

152. C.E. Smith, P.S. Smith, R.Ll. Thomas, E.G. Robins, J.C. Collings, C. Dai, A.J. Scott, S. Borwick, A.S. Batsanov, S.W. Watt, S.J. Clark, C. Viney, J.A.K. Howard, W. Clegg and T.B. Marder, "Arene-perfluoroarene interactions in crystal engineering: structural preferences in polyfluorinated tolans", *Journal of Materials Chemistry* 14:413-420, 2004.
DOI: 10.1039/b314094f

153. N.A. Morrison, F.I. Bell, A. Beautrait, J. Ritchie, C. Smith, I.J. McEwen and C. Viney, "Do Natural Silks Make Good Engineering Materials?", in *Biological and Bioinspired Materials and Devices* (MRS Symposium Proceedings, vol. 823; Edited by J. Aizenberg, W.J. Landis, C. Orme and R. Wang), Materials Research Society, Warrendale PA, 2004, pp. 97-102 (pp. W8.4.1-W8.4.6).

154. S.W. Watt, C. Dai, A.J. Scott, J.M. Burke, R.Ll. Thomas, J.C. Collings, C. Viney, W. Clegg and T.B. Marder, "Structure and Phase Behaviour of a 2:1 Complex Between Arene- and Fluoroarene-Based Conjugated Rigid Rods", *Angewandte Chemie International Edition* 43:3061-3063, 2004.
(Alternative citation: *Angewandte Chemie* 116:3123-3125, 2004.)
DOI: 10.1002/anie.200453828

155. C. Viney, "Steamed Superhero?", *Materials Today* 7(7/8):64, 2004. **Invited**.
DOI: 10.1016/S1369-7021(04)00370-0

156. C. Viney, "Self-Assembly as a Route to Fibrous Materials: Concepts, Opportunities and Challenges", *Current Opinion in Solid State and Materials Science* 8:95–101, 2004.
DOI:10.1016/j.cossms.2004.04.001

157. C. Viney and F.I. Bell, "Inspiration versus Duplication with Biomolecular Fibrous Materials: Learning Nature's Lessons without Copying Nature's Limitations", *Current Opinion in Solid State and Materials Science* 8:165–171, 2004.
DOI:10.1016/j.cossms.2004.03.001

158. T.M. Fasina, J.C. Collings, D.P. Lydon, D. Albesa-Jové, A.S. Batsanov, J.A.K. Howard, P. Nguyen, M. Bruce, A.J. Scott, W. Clegg, S.W. Watt, C. Viney and T.B. Marder, "Synthesis, Optical Properties, Crystal Structures and Phase Behaviour of Selectively Fluorinated 1,4-bis(4'-pyridylethynyl)benzenes, 4-(phenylethynyl)pyridines and 9,10-bis(4'-pyridylethynyl) anthracene, and a $Zn(NO_3)_2$ Coordination Polymer", *Journal of Materials Chemistry* 14: 2395-2404, 2004.
DOI: 10.1039/b405128a

159. T.M. Fasina, J.C. Collings, J.M. Burke, A.S. Batsanov, R.M. Ward, D. Albesa-Jové, L. Porrès, A. Beeby, J.A.K. Howard, A.J. Scott, W. Clegg, S.W. Watt, C. Viney and T.B. Marder, "Synthesis, optical properties, crystal structures and phase behaviour of symmetric, conjugated ethynylarene-based rigid rods with terminal carboxylate groups", *Journal of Materials Chemistry* 15:690-697, 2005.
DOI: 10.1039/b413514h

160. J. Ritchie, C. Smith, F.I. Bell, I.J. McEwen and C. Viney, "Effects of Wetting and Desiccation on the Creep Properties of Spider Dragline Silk", in *Mechanical Properties of Bioinspired and Biological Materials* (MRS Symposium Proceedings, vol. 844; Edited by C. Viney, K. Katti, F.-J. Ulm and C. Hellmich), Materials Research Society, Warrendale PA, 2005, pp. 125-130 (pp. Y4.4.1-Y4.4.6).
ISBN: 1-55899-792-X

161. J.E. Trancik, J.T. Czernuszka, F.I. Bell and C. Viney, "Nanoscale Origins of Spider Dragline Mechanical Properties", in *Mechanical Properties of Bioinspired and Biological Materials* (MRS Symposium Proceedings, vol. 844; Edited by C. Viney, K. Katti, F.-J. Ulm and C. Hellmich), Materials Research Society, Warrendale PA, 2005, pp. 131-136 (pp. Y4.7.1-Y4.7.6).
ISBN: 1-55899-792-X

162. C. Viney, K. Katti, F.-J. Ulm and C. Hellmich (Editors), *Mechanical Properties of Bioinspired and Biological Materials* (MRS Symposium Proceedings, vol. 844; 342pp.), Materials Research Society, Warrendale PA, 2005.
ISBN: 1-55899-792-X

163. J.E. Trancik, J.T. Czernuszka, D.J.H. Cockayne and C. Viney, "Nanostructural physical and chemical information derived from the unit cell scattering amplitudes of a spider dragline silk", *Polymer* 46:5225–5231, 2005.
DOI: 10.1016/j.polymer.2005.04.007

164. J.E. Trancik, J.T. Czernuszka, F.I. Bell and C. Viney, "Nanostructural features of a spider dragline silk as revealed by electron and X-ray diffraction studies", *Polymer* 47:5633-5642, 2006. (**Invited** contribution to special issue in honor of Professor David Bassett.)
DOI: 10.1016/j.polymer.2005.01.110

165. E.J. Reed, M.R. Dunlap, J. Jasinski and C. Viney, "Microstructure, Nanostructure and Properties of the Wasp Petiole", *Materials Research Society Symposium Proceedings* 975E, Warrendale, PA, 2007), paper 0975-DD07-04.

166. C. Viney, K. Katti, C. Hellmich and U. Wegst (Editors), *Mechanics of Biological and Bio-Inspired Materials* (MRS Symposium Proceedings, vol. 975E), Materials Research Society, Warrendale, PA, 2007.

167. E.J. Reed, L. Klumb, M. Koobatian and C. Viney, "Biomimicry as a Route to New Materials: what kinds of lessons are useful?", *Philosophical Transactions of the Royal Society A*, 2009, in press. **Invited**.
DOI:10.1098/rsta.2009.0010

Christopher Viney

Research, Teaching and Infrastructure Support from *External* Agencies

---

* *Joint study program* with Drs R.J. Twieg and T.P. Russell of the IBM Almaden Research Center, San Jose, CA.
  1 April 1988 to 31 March 1995.
  This program provided access to materials synthesis and characterization facilities in San Jose, and supported free exchange of materials and reimbursed travel between Seattle and San Jose.
  $140,000 estimated value of IBM support ($20,000 per year).

* *Applications of Liquid Crystalline Polymers*.
  Washington Technology Centers (WTC), Seattle, WA.
  1 July 1988 - 30 June 1993.
  $144,000 total.

* A Philips *x-ray generator* was donated by the IBM Almaden Research Center, San Jose, CA.
  27 October 1988.
  $35,000 estimated value.

- *Tailored Organometallic Polymers* (with R.M. Laine).
  Air Force Office of Scientific Research (AFOSR).
  1 May 1989 - 30 April 1992, extended to 31 October 1992.
  $480,000 total; $102,000 allocated to CV.

* *The Nucleation and Growth of Ordered Domains in Liquid Crystalline Polymers*.
  American Chemical Society Petroleum Research Fund (ACS-PRF).
  1 September 1989 - 31 August 1991.
  $18,000 total direct costs.

* *Liquid Crystalline Polymers and the Microstructure of Silk*.
  US Army Research Labs, Natick MA.
  1 April 1990 - 30 September 1990.
  $7,800 awarded as a Student Service Contract.

* *Liquid Crystalline Polymers and the Microstructure of Silk*.
  US Army Research Labs, Natick MA.
  1 July 1991 - 30 September 1991.
  $4,988 awarded as a Student Service Contract.

* *Liquid Crystalline Routes to Ordered Biopolymers*.
  US Army Research Labs, Natick MA.
  1 August 1991 - 31 July 1994, extended to 31 January 1995.
  $126,142 total.

* *3M Nontenured Faculty Grant Award*.
  3M Corporation, Ceramic Technology Center, St Paul MN.
  Three annual awards 1991-1993.
  $45,000 total direct costs.

- *Tailored Copolymers as Advanced Dental Restorations* (with R.M. Laine and J.I. Nicholls).
  National Institute of Dental Research (NIH / NIDR).
  30 September 1991 - 29 September 1994.
  $342,104 total direct costs; $131,000 direct costs allocated to CV.

* *Spinning Natural and Genetically Engineered Silk: Advancing Liquid Crystalline Polymer Technology* (with P. Yager).
  National Science Foundation (NSF).
  1 August 1992 - 31 July 1995.
  $450,000 total; approx. $300,000 allocated to CV.

* *From Natural Silk Secretions to High-Performance Fibers*.
  American Chemical Society Petroleum Research Fund (ACS-PRF).
  1 September 1992 - 31 August 1995.
  $50,000 total direct costs.

* *Acquisition of an Environmental Scanning Electron Microscope (ESEM)*.
  National Science Foundation (NSF). Proposal STI-9413464.
  July 1994.
  $197,340 total direct costs.

- *Modelling and Simulation of the Properties and Processing of Materials* (with 1 Principal Investigator and 15 other Co-Investigators).
  Higher Education Funding Council for England / Office of Science and Technology / Engineering and Physical Sciences Research Council (HEFCE / OST / EPSRC).
  December 1996.
  £726,000 total.

* *Microstructural Studies of Property-Optimised Polymer Fibres (Spider Silk)*.
  Engineering and Physical Sciences Research Council (EPSRC). Grant GR/L28326.
  1 August 1997 - 31 July 2000.
  £184,474 total.

- *Refurbishment of Polymer, Biomaterials and Metallurgical Processing Laboratories* (with 1 Principal Investigator and 4 other Co-Investigators).
  Higher Education Funding Council for England (HEFCE).
  May 1998.
  £136,400 total.

* *Birefringence of Natural Silks*.
  The Royal Society, London. Grant RSRG 20212.
  February 1999.
  £9,362 total direct costs.

* *Supramolecular Liquid Crystals* (with F. Gray).
  The Carnegie Trust for the Universities of Scotland: Vacation Scholarships for Undergraduates.
  April 1999.
  £570 total direct costs.

* *RSC Public Affairs Small Grants Scheme*.
  The Royal Society of Chemistry.
  September 1999.
  £250 total direct costs.

* *Towards high-performance fibres inspired by natural silk: an integrated approach* (with M. Elices).
  The British Council: *Acciones Integradas* Programme.
  March 2000.
  £4,950 total direct costs.

* *Time-dependent tensile properties of silk* (with J. Ritchie).
  The Carnegie Trust for the Universities of Scotland: Vacation Scholarships for Undergraduates
  May 2000.
  £760 total direct costs.

* *Creep Deformation of Natural Silks* (with C. Smith).
  The Nuffield Foundation. Grant URB/00210/G.
  May 2000.
  £1,380 total direct costs.

* *Nuffield Science Bursaries 2000* (with J.E. Parker and J.H. Cameron).
  The Nuffield Foundation (supporting summer vacation research by High School students).
  July 2000.
  £910 total direct costs.

* *Communicating the Attractions of Chemistry*.
  Esso Higher Education Support Scheme.
  August 2000.
  £10,857 total direct costs.

- *Dynamic Environmental Scanning Electron Microscopy (ESEM) Analysis* (with 1 Principal Investigator and 5 other Co-Investigators).
  Engineering and Physical Sciences Research Council (EPSRC); Multi-Project Research Equipment Proposal.
  1 October 2000 - 30 September 2003. Grant GR/N38435/01.
  £282,045 total.

* *Nuffield Science Bursaries 2001* (with J.E. Parker).
  The Nuffield Foundation (supporting summer vacation research by High School students).
  July 2001.
  £520 total direct costs.

* *EuroConference on Self-Assembling Fibrous Materials*.
  European Commission / European Science Foundation.
  Awarded 2001, for Conference held in Bad Herrenalb (Germany) 7-12 September 2002.
  Euro 50,545 total.

* *Centre For Biomimetic Design & Synthesis* (with P.D. Bailey).
  Scottish Higher Education Funding Council (SHEFC) Research Investment Fund & Science Research Investment Fund.
  1 May 2002 - 30 September 2002.
  £607,000 total.

* *Molecular Model Kits for Chemistry Undergraduates*.
  Motorola.
  November 2002.
  £780 total.

* *A SANS study of mucin-water phases*.
ISIS – Rutherford Appleton Laboratory.
February 2003.
£10,000 total.

- *Engineering Projects in Community Service (EPICS)*. Subcontract from Purdue University National EPICS Service Learning Program, supported by NSF (#DUE-0231361).
Co-PI; with R. Bales, M. Colvin, M. Conklin, T. Harmon, V. Leppert (PI), R. Winston, J. Wright.
1 February 2004 - 31 January 2008.
$112,000 total to UC Merced.

* *DLR: Implementing Student Excellence - A Unique Opportunity*.
National Science Foundation, Planning Grant (#EEC-0431972; ranked #1 by review panel).
PI; with M. Colvin, T. Harmon, V. Leppert.
1 August 2004 - 31 July 2006.
$99,918 total.

* *An Investigation of Hippopotamus "Sweat"*.
Unilever R&D (Port Sunlight, UK).
PI
March 2005.
$5,225 total.

- *Center of Integrated Nanomechanical Systems (COINS)*. Nanoscale Science and Engineering Center, supported by NSF. Subcontract from UC Berkeley (Multi-Campus Award #SA4593).
UC Merced Co-PI, with V. Leppert (PI) and T. Harmon.
1 September 2004 - 31 August 2009.
$525,000 total to UC Merced.

- *MRI: Acquisition of Cryogenic Capabilities for Microanalysis of Hard-Soft Nanoscale Materials in the Transmission Electron Microscope*.
National Science Foundation (#DMR-0521685).
Co-PI; with V. Leppert (PI), D. Kelley, D. Ojcius, P. O'Day.
1 September 2005 - 31 August 2008.
$246,526 total.

- *MRI: Acquisition of a Powder X-ray Diffractometer for Environmental & Materials Research at UC Merced*.
National Science Foundation (#EAR-0619398).
Co-PI; with P. O'Day (PI), S. Traina, V. Leppert.
1 August 2006 - 31 July 2008.
$187,407 total.

* Asterisks denote that CV was the principal investigator / applicant

Christopher Viney

Teaching Experience

Lectures, Courses and Modules

University of California at Merced

- ICP 1 (inaugural Freshman level *Integrated Calculus and Physics**; 8 credits; 5x; Fall Semester 2005, 2006, 2007 and Spring Semester 2006, 2007; jointly with one other faculty member). Lectured Physics component (and substituted on several occasions for the Mathematics faculty member); developed a laboratory exercise; offered office hours and evening review sessions on both the Physics and Calculus components.
- CORE 1 (inaugural Freshman level general education course *The World at Home – Planning for the Future in a Complex World I**; 4 credits; 8x; Fall Semester 2005 to 2008 and Spring Semester 2006 to 2009; jointly with other faculty members). *Introductory Lecture* (part); lecture on *Quantitative Literacy*; lecture on *The Rise of Science, Technology, Infrastructure and Expertise*; lecture on *Shifting the Origin: the Legacy of Copernicus, Galileo and Newton*; lecture on *Technology: Boon without Bane?*; participation in discussion sections and panels; introductory contextual material for several *CORE Friday* events. Co-Chair of planning committee, and principal coordinator of the course, 2004 – June 2007.
- CORE 100 (inaugural Junior level general education course *The World at Home – Planning for the Future in a Complex World II**; 4 credits; 2x; Spring Semester 2006, 2007; jointly with other faculty members). Lecture on *The Scientific Method applied to Public Policy*; lecture on *How to Give an Effective Presentation*.
- CORE 090X Freshman Seminar (*The Material World**; 1 credit; 2x; Fall Semester 2006, 2007). Presentations, demonstrations, practical exercises and discussions.
- CORE 090X Freshman Seminar (*Materials Innovation in History and the Arts**; 1 credit; 1x; Spring Semester 2007). Presentations, demonstrations, practical exercises and discussions.
- WRI 116 (Junior level *Writing in the Natural Sciences**; 4 credits; 2x; Fall Semester 2006 and Spring Semester 2007). Discussion section guest.
- ENGR 45 (Sophomore level *Introduction to Materials**; 4 credits; 2x; Spring Semester 2008, 2009). Included development of all lectures and weekly laboratory classes.
- ENGR 97 / ENGR 197 (*Service Learning**; 1 or 2 credits; 8x; Fall Semester 2005 to 2008 and Spring Semester 2006 to 2009). Mentored an inaugural team developing materials to enhance science curricula for *Merced County Office of Education*. Also, "skills session" lecture for all teams, on *How to Give an Effective Presentation*.
- BIOE 195 (*Upper Division Undergraduate Research**; 2 credits; 1x; Spring Semester 2008). Supervised student researching *Molecular Order in Natural Latex*.
- BIOE 199 (*Upper Division Individual Study**; 1 credit; 4x; Fall Semester 2005, 2006 and Spring Semester 2006, 2007). Supervised student researching *Nature's Uses for Liquid Crystalline Order*, and *Microstructure, Nanostructure and Properties of the Wasp Petiole*.
- CHEM 195 (*Upper Division Undergraduate Research**; 2 or 3 credits; 5x; Fall Semester 2006 to 2008 and Spring Semester 2007, 2008). Supervised student researching *Liquid Crystallinity in Suspensions of Filamentous Phage*.

- ENGR 195 (*Upper Division Undergraduate Research**; 2 credits; 1x; Fall Semester 2007). Supervised student researching *Molecular Order in Natural Latex*.
- AMSE 290 (Graduate level *Current Topics in Molecular Science and Engineering**; 3 credits; 1x; Fall Semester 2005; jointly with other faculty members). Mentored student readings and presentations for 2-week period.
- BEST 201 (Graduate level course *Special Topics in Materials**; 3 credits; 2x; Fall Semester 2007, 2008; jointly with other faculty members). Two-hour lecture on *Entropy, Materials and Life*.

*New material.

Development of scope and contents for the following inaugural majors / courses / programs:

- *Bioengineering* (led effort to establish Bioengineering as an opening major; led effort to define inaugural curriculum).
- *Materials Science & Engineering* (led effort to establish Materials Science & Engineering as a major; led effort to define inaugural curriculum).
- *Engineering Service Learning* (member of committee developing hallmark service learning program for all engineering students; PI on nationally top-ranked planning grant from NSF to support service learning).
- *General Education Core Courses* (co-chair of cross-school committee that developed 1-semester 4-credit course for Freshmen).
- *Integrated Physics and Calculus* (member of committee that developed 1-semester 8-credit course for Freshmen).

<u>Heriot-Watt University, Edinburgh</u>

- BSc I: *Chemical Principles** (1x; Spring Term 2003; jointly with other faculty members).
- BSc I: *Chemistry for Biological Scientists** (3x; Autumn Term 2000 to 2002; jointly with other faculty members).
- BSc II: *Molecular Structure and Spectroscopy* (1x; Summer Term 2003; jointly with other faculty members).
- BSc III: *Chemistry of Materials** (4x; Autumn Term 1999 to 2002; module co-ordinator; taught jointly with three other faculty members).
- BSc IV / MChem: *Microstructures and Properties of Material*s* (4x; Autumn Term 1999 to 2002; module co-ordinator; taught jointly with two other faculty members).
  This course was developed in formats suitable for both traditional and electronic delivery.
- BSc IV / MChem: *Computers in Chemistry** (4x; Summer Term 2000 to 2003; taught jointly with three other faculty members).
- Graduate level: *Supramolecular Self-Assembly of Biological Fibrous Materials** (1x; Summer Term 1999).

*New modules integrated into the curriculum.

- Chair, management committee overseeing provision of Chemistry modules for Life Sciences degrees.
- Co-originator of new degree program in *Chemistry with Forensic Science*.
- Director of degree program in *Chemistry with a Year in North America*.

University of Oxford (*denotes new courses integrated into the curriculum)

- First year Physical Sciences: *Structure of Materials: Introduction* (2x; Michaelmas Term 1997 to 1998). Included the first lecture taken by Freshmen entering the Department of Materials.
- First year Physical Sciences: *Transforming Materials: Polymer Synthesis** (4x; Hilary Term 1995 to 1998).
- Second year Metallurgy & the Science of Materials (MSOM) / Metallurgy, Economics & Management (MEM): *Structure and Transformations of Materials: Microstructures of Polymers** (4x; Hilary Term 1995 to 1996, Trinity Term 1997 to 1998).
- Second year MSOM/MEM: *Fluid Flow* (2x; Hilary Term 1997 to 1998).
- Second year MSOM/MEM: *Engineering Applications of Materials: Polymers** (4x; Trinity Term 1995 to 1998).
- Second year Supplementary Subject in Physical Sciences: *Materials Chemistry of Metals, Ceramics and Polymers* – Introductory lecture (1x; Michaelmas Term 1997) and all Polymer lectures* (3x; Hilary Term 1996 to 1998).
- Second year MSOM / third year MEM: *Tensor Properties of Materials* (1x; Michaelmas Term 1997; substitute for terminally ill colleague at short notice).
- Third year MSOM / third year MEM / fourth year EMS Advanced Option: *Polymer Molecules, Microstructures & Mechanical Properties** (4x; Michaelmas Term 1995 to 1998).
- Third year MSOM / fourth year MEM Advanced Option: *Electrical Polymers** (3x; Hilary Term 1996 to 1998).

University of Washington (*denotes new courses integrated into the curriculum)

- Junior level: *Materials Processing: Transport* (fluid flow, heat flow, diffusion), Department of Materials Science & Engineering (4x; Winter Quarter 1988 to 1991).
- Junior level: *Introduction to Research & Design*, Department of Materials Science & Engineering (2x; Spring Quarter 1989 and 1990).
- Junior level: *Practical Metallurgy**, Department of Materials Science & Engineering (1x; Fall Quarter 1990; jointly with 2 other faculty members).
- Graduate / Senior level: *Polymeric Materials**, Department of Materials Science & Engineering, and Center for Bioengineering (8x; Summer Quarter 1988, Spring Quarter 1989, Fall Quarter 1989 - 1994).
  This course was recorded on video and televised in Fall Quarter 1990.
- Graduate level: *Advanced Optical Microscopy & Imaging**, Department of Materials Science & Engineering (1x; Fall Quarter 1988).
- Graduate level: *Fundamentals of Materials Processing**, Department of Materials Science & Engineering (1x; Fall Quarter 1989; jointly with 2 other faculty members).
- Graduate level: *Materials Math**; Department of Materials Science & Engineering (1x; Spring Quarter 1990).
- Graduate level: *Liquid Crystals**, Center for Bioengineering, and Department of Materials Science & Engineering (3x; Spring Quarter 1991-1992, 1994).
- Graduate level: *Molecular Bioengineering Fundamentals**, Center for Bioengineering (4x; Fall Quarter 1991-1992, Spring Quarter 1992, 1994; jointly with other faculty members).
- Graduate level: *Biomedical Light Microscopy & Imaging**, Center for Bioengineering (1x; Spring Quarter 1993; jointly with 1 other faculty member).

Cambridge University

- Initiated and presented Graduate course on *Optical Microscopy*, Dept. of Materials Science & Metallurgy (2x; Jan. 1985 to Sept. 1986). First lecture course to be offered by a postdoctoral researcher in the Department.

Intensive Small Group Teaching

University of Oxford

Undergraduate Tutorials in Metallurgy & the Science of Materials (MSOM); Metallurgy, Economics & Management (MEM); Engineering & Materials Science (EMS).
Tutorials last for an hour; students typically attend singly or in pairs. The number of hours typically spent with each student, per topic in the following list, is indicated in parentheses. Exact contents depend on needs of each student.

- 1st year: Broad coverage of materials curriculum, including:
  Crystallography (4), *Metals & Alloys* (1), *Properties of Gases* (1), *Thermodynamics & Kinetics* (3), *Polymer Synthesis* (1), *Elasticity & Structures* (2), *Point Defects* (1), *Planar Defects & Dislocations* (2), *Plasticity* (1), *Fracture* (1), *Microstructures of Materials* (4), *Composites* (1), *Introduction to Processing* (1).
- 2nd year: Broad coverage of materials curriculum, including:
  Tensor Properties of Materials (2), *Fluid Flow* (1), *Extraction* (2), *Corrosion* (1), *Powder Processing* (1), *Strengthening Mechanisms* (2), *Creep* (1), *Microstructures of Polymers* (1), *Mechanical Properties of Polymers* (1), *Mechanical Properties of Composites* (1), *Engineering Applications of Polymers* (1).
- 3rd year: Advanced Option topics:
  Polymer Molecules, Microstructures & Mechanical Properties (2), *Electrical Polymers* (1), *Non-Ferrous Metallurgy* (1).

Third Year Team Design Project Adviser.
Projects are open-ended; they address design and market analysis, and may also involve demonstration of concept. They are intended to promote working in teams, i.e. managing a team project, dividing the workload sensibly, and communicating efficiently. Each team member spends a nominal 100 hours working on the project. The objective is to produce a report, in the form of detailed design proposals, which could be used by a manufacturer to launch a marketable product or by an engineer to implement a new process. Teams also deliver a formal presentation on their proposals, as if to a company Board.

Cambridge University

Supervisions in Undergraduate Natural Sciences.
Supervisions at Cambridge are equivalent to Tutorials at Oxford. The number of hours typically spent with each student per topic in the following list is indicated in parentheses.

- 1st year: *Crystalline Materials* (20), for St Edmund's House (Oct. 1981 to June 1982).
- 2nd year: *Crystalline State* (20), for Trinity College (Oct. 1981 to June 1986); *Metallurgy & Materials Science* (20), for Trinity College (Oct. 1982 to June 1986).

Supervisions in Undergraduate Engineering.

- 1st year: *Materials* (2), for Trinity College (Oct. 1983 to June 1986).
- 2nd year: *Materials - General and Electrical Options* (4), for Trinity College (Oct. 1982 to June 1986).
- 3rd year: *Materials - Production Engineering Option* (2), for Trinity College, Gonville and Caius College, and Peterhouse (Oct. 1987 to Dec. 1987).

Training Courses and Workshops Attended

Heriot-Watt University, Staff Development Programme

- Using the Web in Assessing Student Learning (27 Oct. 1999; Institute for Computer Based Learning / The Learning Technology Service).

University of Oxford, Staff Development Programme

- Refreshing Lecturing (28 Sept. 1995).
- Methods of Assessment: examining and assessing undergraduates (31 May 1996).
- Lecturing Skills Practice (8 Oct. 1996).
- Creating Knowledge: scholars, tutors and learning processes
  - The science of intuition: why understanding increases when you think less (11 Nov. 1997).
  - Why students don't learn (25 Nov. 1997).
- Pastoral Skills for Tutors (20 April 1998).

University of California at Merced, Center for Research in Teaching Excellence

- Who are Our Students? Maximizing Our Teaching Impact (25 February 2008).
- Who are First Generation and Generation 1.5 Students? Influences on Teaching and Learning (5 March 2008).
- Assessing Student Learning: Course, Program and Institutional Levels (10 March 2008).
- What is Our Role in WASC Accreditation? What the Faculty Needs to Know (12 March 2008).
- How can my Lectures be More Effective? Enriching Lectures with Active Learning (19 March 2008).
- How Scoring Rubrics can Save Time, Enhance Student Learning, and Improve Teaching (2 April 2008).
- How is Disability Services a Teaching Resource? (9 April 2008).

Christopher Viney

Graduate Students Supervised

University of Washington, Seattle, USA

- Daniel J. Brown (MS, Materials Science & Engineering, defended December 1994)
  "Computer Simulation of Microstructural Defects in a Nematic Liquid Crystal"
- Lawrence A. Chick (PhD, Materials Science & Engineering, defended July 1990)
  "Ordering of Rodlike Particles: Continuum versus Lattice Representations"
  Daytime contact: (509) 375-2145
- Christine M. Dannels (MS, Materials Science & Engineering, defended September 1990)
  "Microstructural Scale in Liquid Crystalline Materials"
  Daytime contact: (415) 940-6974
- Dwayne L. Dunaway (MS, Bioengineering, defended January 1994)
  "Mechanical Property and Diameter Evaluation of Epoxide-Treated Silk Fibers"
- Keith B. Guess (MS, Bioengineering, defended January 1995)
  "Effect of Spinning Rate on Properties of Major Ampullate Silk"
- Anne Huber (Baker) (PhD, Bioengineering, defended December 1995)
  "Chimeric Liquid Crystallinity of Bacterial Levan"
- Wendy S. Putnam (MS, Materials Science & Engineering, defended August 1990)
  "Effect of Processing Variables on Banded Textures in Liquid Crystalline Polymers"
  Daytime contact: (415) 620-3974
- Bradley L. Thiel (PhD, Materials Science & Engineering, defended December 1994)
  "The Hierarchical Structure of Spider (Major Ampullate) Silk"

University of Oxford, UK

- Simon Carmichael (MEng, Department of Materials, examined June 1997)
  "The Effect of a Post-Spinning Draw on the Molecular Order of *N. clavipes* Major Ampullate Silk"
- John Craven (MEng, Department of Materials, examined June 1998)
  "Silk-Epoxy Composites"
- Jonathan M. Davies (MEng, Department of Materials, examined June 1996)
  "Water-Mucin Phases"
- Chris Joseph (MEng, Department of Materials, examined June 1998)
  "Variable Matrix Cure in Carbon Fibre / Epoxy Resin Composites"

- Robert W. MacGregor (MEng, Department of Materials, examined June 1997)
  "Raman and Photoluminescence Studies of Plastic Deformation in Synthetic and Poly-crystalline Diamond"

- Nikhil Sharma (MEng, Department of Materials, examined June 1998)
  "Assessment of a Finite Difference Code for Selecting Materials Used in Body Armour"

- Jessika Ebba Trancik (DPhil, Department of Materials, examined March 2001)
  "Silk Microstructures"

Heriot-Watt University, Edinburgh, UK

- Fraser Ian Bell (PhD, Department of Chemistry, examined November 2003)
  "Effects of Temperature, Humidity and Time on the Mechanical Properties of Silk"

- Natalie Morrison (MChem, Chemistry, examined May 2003)
  "Is Natural Silk a Useful Material?"

- Stephen W. Watt (PhD, Department of Chemistry, examined November 2003)
  "Factors that Influence Molecular Packing in both Liquid Crystalline and Related Solid Phases"

University of California at Merced, USA

- Emily J. Reed (PhD, Biological Engineering and Small-scale Technologies (BEST) Graduate Group, in progress)

Christopher Viney

Service on Qualifying, General, and Final Examination Committees for Graduate Students
This list does ***not*** include service as principal research advisor

---

University of Washington, Seattle, USA

Center for Bioengineering

- Douglas Arm (Principal Advisor: Prof. Allan F. Tencer)
  Passed PhD Qualifying Examination in November 1991

- Bryon Bhagwandin (Principal Advisor: Prof. Martin A. Afromowitz)
  Passed PhD Qualifying Examination in September 1991

- Carol DeWeese (Principal Advisor: Prof. Terry Lybrand)
  Passed PhD Qualifying Examination in September 1993

- Frederick T. Gittes (Principal Advisor: Prof. Jonathon Howard)
  Passed PhD General Examination in July 1993; defended PhD dissertation in November 1994 (*Mechanics of Microtubules and the Molecular Motor Kinesin*)

- Dan Leotta (Principal Advisor: Prof. Joan E. Sanders)
  Passed PhD Qualifying Examination in June 1993

- Shelli R. Letellier (Principal Advisor: Prof. Viola Vogel)
  Defended MSE thesis in March 1993 (*Molecular Assemblies at Interfaces: New Model Systems for Studying Biomaterial Interactions*)
  Passed PhD Qualifying Examination in October 1993

- Thor D. Osborn (Principal Advisor: Prof. Paul Yager)
  Passed PhD General Examination in July 1992; defended PhD dissertation in March 1994 (*Development of a Mass-Producible Lipid Bilayer Support Device*)

- Frederick (Fritz) Reitz (Principal Advisor: Prof. Leonard J. Pagliaro)
  Passed PhD Qualifying Examination in September 1993

- Ann E. Schmierer (Principal Advisor: Prof. Buddy D. Ratner)
  Passed PhD Qualifying Examination in May 1992

- Philip Tan (Principal Advisor: Prof. Patrick Stayton)
  Passed PhD Qualifying Examination in February 1994

- Kimberly A. Trabbic (Principal Advisor: Prof. Paul Yager)
  Passed PhD Qualifying Examination in February 1994; passed PhD General Examination in August 1996; defended PhD dissertation in August 1999 (*Control of Fibroin Conformation: Toward the Development of a Biomimetic Spinning Process for Silk Fibers*)

Dept. of Chemical Engineering

- Richard A. Brouns (Principal Advisor: Prof. G.Graham Allan)
  Passed PhD General Examination in September 1991; defended PhD dissertation in July 1993 (*Reaction Mechanisms and Kinetics in Epoxy/Dicyanate Co-Reactive Resins*)

Dept. of Electrical Engineering

- Michael R. Tidwell (Principal Advisor: Prof. Thomas A. Furness)
  Defended MS thesis in January 1995 (*A Virtual Retinal Display for Augmenting Ambient Visual Environments*)

Dept. of Materials Science & Engineering

- Robin S. Adams (Principal Advisor: Prof. Lucien N. Brush)
  Defended MS thesis in May 1994 (*A Weakly Non-Linear Analysis of Finite Amplitude Interface Instability During the laser Melting of Thin Silicon Films*)

- Jean-Maurice Férauge (Principal Advisor: Prof. William D. Scott)
  Defended MS thesis in August 1989 (*Characterization of Low Velocity Impact Damage in a Twenty Four Ply Graphite-Epoxy Laminate*)

- F. Robert Frazier (Principal Advisor: Prof. Michael J. Kaufman)
  Defended MS thesis in August 1989 (*Microstructure-Property Relationships in Al_3Nb Alloys*)

- Dennis Gallagher (Principal Advisor: Prof. Ilhan A. Aksay)
  Defended PhD dissertation in August1988 (*Dispersion in Nonaqueous Solvents for Enhanced Consolidation*)

- Kevin Gaw (Principal Advisor: Prof. F. Ohuchi)
  Defended MS thesis in October 1993 (*Mineralization of Hornified Cellulose Fibers by in situ Precipitation of Calcium Carbonate*)

- Edward W. Hare (Principal Advisor: Prof. Robert G. Stang)
  Passed PhD General Examination in January 1991 (*The Effects of Impurity Elements on the Stress Relaxation and Creep Characteristics of Eutectic Sn-Pb Solder*)

- Richard A. Kennish (Principal Advisor: Prof. Richard M. Laine)
  Defended MS thesis in July 1989 (*Decomposition Pathways of Organometallic Precursors Used in the Fabrication of High T_c Superconducting Fibers*)

- John J. Lannutti (Principal Advisor: Prof. Ilhan A. Aksay)
  Defended PhD dissertation in July 1990 (*Inorganic Polymers in Ceramic Processing*)

- Timothy R. Robinson (Principal Advisor: Prof. Richard M. Laine)
  Defended MS thesis in December 1990 (*Novel, Low Temperature Synthetic Routes to Tailored Soluble Silicates*)

- Barbara J. Tarasevich (Principal Advisor: Prof. Ilhan A. Aksay)
  Defended MS thesis in June 1988 (*Colloidal Interactions and Packing of Nanometer-Sized Particles; Applications to Gel Processing*)

- Mehrdad Yasrebi (Principal Advisor: Prof. Ilhan A. Aksay)
  Defended PhD dissertation in December 1988 (*Microstructural Development in Ceramic-Polymer Systems*)

- Shahrzad Zarkoob (Principal Advisor: Prof. W.D. Scott)
  Defended MS thesis in June 1994 (*ISO 9000 and How it Affects the Underground Cable Industry*)

- Zhi-Fan Zhang (Principal Advisor: Prof. Richard M. Laine)
  Defended MS thesis in August 1990 (*Fabrication of High T_c Superconducting Fibers from Organometallic Precursors*)

Dept. of Physics

- Douglas J. Tweet (Principal Advisor: Prof. Larry B. Sorensen)
  Defended PhD dissertation in December 1990 (*X-Ray Determination of the Molecular Tilt and Layer Fluctuation Profiles of Freely Suspended Liquid Crystals*)

- Tianming Zhang (Principal Advisor: Prof. Larry B. Sorensen)
  Passed PhD General Examination in October 1993 (*Critical Behavior in the Smectic-A Phase*)

University of Oxford, UK

Dept. of Materials

- Alison Lawson (Principal Advisor: Dr Jan Czernuszka)
  Defended D.Phil. thesis in March 1999 (*Collagen – Calcium Phosphate Composites*)

- Hwee Koon Tay (Principal Advisor: Dr John M. Sykes)
  Defended D.Phil. thesis in July 1997 (*Barrier Properties of Water-Borne Polymeric Coatings and Corrosion Protection*)

Dept. of Opthalmology

- Jyotin C. Pandit (Principal Advisor: Dr John M. Tiffany)
  Defended Master of Science by Research thesis in July 1996; again in November 1998 (*The Role of Mucins in Human Tear Fluid*)

Heriot-Watt University, Edinburgh, UK

Dept. of Chemistry

- Juliet D. Cameron (Principal Advisor: Prof. Ian Cowie)
  Defended PhD thesis in June 2000 (*Investigation of the Mechanical and Structural Properties of Cellulose Tricarbanilate / Polymethacrylate Blends*)

- Simona Gagliardi (Principal Advisor: Dr Valeria Arrighi)
  Defended PhD thesis in January 2003 (*Conformation and Dynamics in Cyclic and Linear Polymers by Neutron Scattering Techniques*)

University of California at Merced, USA

Physics and Chemistry Graduate Group

- Korana Burke (Principal Advisor: Prof. Kevin Mitchell)
  Passed PhD Qualifying Examination in May 2007

Biological Engineering and Small-scale Technologies (BEST) Graduate Group

- Eric Chen (Principal Advisor: Prof. Wei-Chun Chin)
  Passed PhD Qualifying Examination in August 2008

- Gayatri Premasekharan (Principal Advisor: Prof. Valerie Leppert)
  Passed PhD Qualifying Examination in October 2008

World Cultures and History Graduate Group

- Trevor D. Albertson (Principal Advisor: Prof. Gregg Herken)
  Passed PhD Qualifying Examination in November 2007

University of Cambridge, UK

Dept. of Materials Science & Metallurgy

- S. Eilidh Bedford (Principal Advisor: Prof. Alan H. Windle)
  Defended PhD dissertation in June 1992 (*Computational Prediction of Liquid Crystalline Microstructures*)

Dept. of Physics

- Owen M. Astley (Principal Advisor: Dr Athene M. Donald)
  Defended PhD dissertation in December 2000 (*Scattering Studies of Cell Wall Polymers*)

- Anne L. Fletcher (Principal Advisor: Dr Athene M. Donald)
  Defended PhD dissertation in February 1998 (*Cryogenic Developments and Signal Amplification in Environmental Scanning Electron Microscopy*)

University of Limerick, Ireland

Dept. of Materials Science and Technology

- Gordon James Armstrong (Principal Advisor: Prof. Martin Buggy)
  Defended PhD thesis in December 2002 (*Self-Assembling Hydrogen-Bonded Polymers*)

Christopher Viney

Seminar, Colloquium, and Conference Presentations (external; selected; as presenter)

---

1. G.R. Mitchell, C. Viney and A.H. Windle
"The Relationship of Molecular Organisation to the Optical Textures of Liquid Crystalline Polymers"
1982 Modern Metallography in Metallurgy Conference & Exhibition, University of Cambridge, UK (6-8 Sept. 1982)

2. C. Viney and A.H. Windle
"Interpretation of Optical Microstructures of Liquid Crystal Polymers"
Biennial Conference on *Physical Aspects of Polymer Science*, University of Reading, UK (14-16 Sept. 1983)

3. C. Viney
"Optical Microscopy of Liquid Crystalline Polymers"
Invited Presentation, Symposium on *Polymer Characterisation*, Instituttet for Kemiindustri, The Technical University of Denmark, Lyngby, Denmark (26 March 1984)

4. C. Viney
Various (4) prepared discussion contributions
Faraday Discussion no.79: *Polymer Liquid Crystals*, University of Cambridge, UK (1-3 April 1985)

5. C. Viney
"Molecular Ordering as Deduced from Optical Microscopy"
Invited Presentation, Department of Physics, University of Reading, UK (29 April 1985)

6. C. Viney and A.H. Windle
"Molecular Ordering in Nitrocelluloses"
21st Anniversary Conference on Physical Aspects of Polymer Science, University of Reading, UK (11-13 Sept. 1985)

7. C. Viney and A.H. Windle
"Lyotropic Behaviour of Nitrocellulose"
11th International Liquid Crystal Conference, Berkeley, CA (30 June - 4 July 1986)

8. C. Viney and A.H. Windle
"Molecular Ordering of Nitrocellulose"
Cellucon '86: Wood and Cellulosics, The North East Wales Institute, Wrexham, UK (14-18 July 1986)

9. C. Viney
"Intermolecular Correlations in Liquid Crystalline Polymers"
Invited Presentation, Department of Chemistry, Stanford University, Palo Alto, CA (6 March 1987)

10. C. Viney
"Intermolecular Correlations in Liquid Crystalline Polymers"
Invited Presentation, Department of Materials Science & Engineering, University of Washington, WA (13 March 1987)

11. C. Viney, D.Y. Yoon, B. Reck and H. Ringsdorf
"Phase Behaviour and Molecular Ordering in a Polymer with both Thermotropic and Lyotropic Properties"
Gordon Research Conference on Liquid Crystals, Wolfeboro, NH (22-26 June 1987)

12. C. Viney
"Transmitted Polarised Light Microscopy of Liquid Crystalline Polymers: Critical Interpretation of Contrast"
Invited Presentation, Istituto Guido Donegani, Novara, Italy (8 July 1987)

13. C. Viney
"Transmitted Polarised Light Microscopy of Liquid Crystalline Polymers: Critical Interpretation of Contrast"
Invited Presentation, Istituto di Chimica Industriale, Genoa, Italy (9 July 1987)

14. C. Viney
"A Flexible View of some Rigid Molecules"
Invited Presentation, Battelle Pacific Northwest Laboratories, Richland, WA (1 April 1988)

15. C. Viney, R.J. Twieg, T.P. Russell and L.E. Depero
"The Structural Basis of Transitions between Highly Ordered Smectic Phases in Semi-Fluorinated Alkanes"
12th International Liquid Crystal Conference, Freiburg, West Germany (15-19 Aug. 1988)

16. R.J. Twieg, C. Viney and K.M. Betterton
"Novel Synthesis of 4,4'-di-n-alkylphenylbenzoates and the Characterization of their Liquid Crystalline Transitions"
12th International Liquid Crystal Conference, Freiburg, West Germany (15-19 Aug. 1988)

17. C. Viney
"Effect of Processing Environment on Order in Liquid Crystalline Polymer Matrix Materials"
U.S./Japan Workshop on the *Processing of Advanced Ceramics*, Seattle, WA (21-24 Aug. 1988)

18. L.A. Chick, C. Viney and I.A. Aksay
"Liquid crystal-like phase separation in systems of macroscopic rods"
Materials Research Society (MRS) 1988 Fall Meeting, Boston, MA (28 Nov. - 3 Dec. 1988)

19. L.A. Chick, C. Viney and I.A. Aksay
"Phase Separation in Rod-like Particles and Implications for Composite Structure"
63rd Colloid and Surface Science Symposium, sponsored by the American Chemical Society (ACS) Division of Colloid and Surface Chemistry, Seattle, WA (18-21 June 1989)

20. C. Viney
"Crystallinity and Ordered Structures in Polymers: Concepts and Challenges"
Invited Opening Paper, *Du Pont Polymer Products Department TECHCON 89*, Princeton, NJ (5-7 June 1989)

21. C. Viney
"Light Microscopy of Polymers"
Invited Tutorial, *47th Annual Meeting of the Electron Microscopy Society of America (EMSA)*, Symposium on *Microscopy of Polymers*, San Antonio, TX (6-11 Aug. 1989)

22. C. Viney
"Liquid Crystalline Polymer Textures near the Resolution Limit of the Light Microscope"
Invited Paper, *47th Annual Meeting of the Electron Microscopy Society of America (EMSA)*, Symposium on *Microscopy of Polymers*, San Antonio, TX (6-11 Aug. 1989)

23. C. Viney and W.S. Putnam
"On Resolving Fine Periodic Microstructures in the Optical Microscope"
47th Annual Meeting of the Electron Microscopy Society of America (EMSA), Symposium on *Microscopy of Polymers*, San Antonio, TX (6-11 Aug. 1989)

24. C. Viney
"Light Microscopy of Liquid Crystalline Polymers"
Invited Paper, *American Chemical Society (ACS) 198th National Meeting*, Symposium on *Advances in Liquid Crystalline Polymers*, Miami Beach, FL (10-15 Sept. 1989)
[Abstract published in *Abstracts of Papers of the American Chemical Society* 198(Sept):279-POLY, 1989]

25. C. Viney and L.A. Chick
"Modelling Microstructure in Materials that Contain Anisotropic Particles"
Materials Research Society (MRS) 1989 Fall Meeting, Boston, MA (27 Nov. - 2 Dec. 1989)

26. C. Viney
"The Scale of Liquid Crystalline Polymer Microstructures"
Invited Presentation, Institute of Materials Science, University of Connecticut, Storrs, CT (1 June 1990)

27. C. Viney, R.J. Twieg, B.R. Gordon and J.F. Rabolt
"Transitions to liquid crystalline phases in tri-block oligomers $F(CF_2)_n(CH_2)_m(CF_2)_nF$"
13th International Liquid Crystal Conference, Vancouver, Canada (22-27 July 1990)

28. C. Viney
"Polymers for multifunctional applications: general considerations"
Invited Opening Paper, NATO Workshop on *Organometallic Polymers with Special Properties*, Cap D'Agde, France (9-14 Sept. 1990)

29. C. Viney
"Characterizing polymeric materials"
Invited Paper, NATO Workshop on *Organometallic Polymers with Special Properties*, Cap D'Agde, France (9-14 Sept. 1990)

30. K. Kerkam, D. Kaplan, S. Lombardi and C. Viney
"Liquid Crystalline Characteristics of Natural Silk Secretions"
Materials Research Society (MRS) 1990 Fall Meeting, Boston, MA (26 Nov. - 1 Dec. 1990)

31. C. Viney, K. Kerkam, L. Gilliland, D. Kaplan and S. Fossey
"Molecular Order in Silk Secretions"
Materials Research Society (MRS) 1991 Fall Meeting, Boston, MA (2-6 Dec. 1991)

32. C. Viney
"Light Microscopy of Self-Assembling Biological Macromolecules"
Invited Paper, *American Chemical Society (ACS) 203rd National Meeting*, Symposium on *Macromolecules and the New Microscopy*, San Francisco, CA (5-10 April 1992)
[Abstract published in *Abstracts of Papers of the American Chemical Society* 203(3):499-POLY, 1992]

33. C. Viney, A. Huber and P. Verdugo
"Processing Biological Polymers in the Liquid Crystalline State"
Invited Paper, *Biodegradable Materials and Packaging Symposium*, US Army RD&E Center, Natick, MA (16-18 June 1992)

34. C. Viney
"Bioengineered Materials: Becoming Second Nature?"
Invited Presentation, Department of Materials Science and Metallurgy, Cambridge University, UK (26 June 1992)

35. C. Viney
"Use of Light Microscopy in the Qualitative and Quantitative Study of Liquid Crystalline Order"
50th Annual Meeting of the Electron Microscopy Society of America (EMSA), Boston, MA (16-21 Aug. 1992)

36. R. Sinicki and C. Viney
"Human Gallstones: Specimen Preparation and Light Microscopy"
50th Annual Meeting of the Electron Microscopy Society of America (EMSA), Boston, MA (16-21 Aug. 1992)

37. C. Viney
"Coherence at the Materials / Life Science Interface"
Invited Paper, *Materials Research Society (MRS) 1992 Fall Meeting*, Symposium on *Frontiers of Materials Research*, Boston, MA (29 Nov. - 4 Dec. 1992)

38. C. Viney, A.E. Huber, D. Dunaway, P. Verdugo and S.T. Case
"Processing Biological Polymer Solutions: Kinetic Aspects of Microstructural Control"
Materials Research Society (MRS) 1992 Fall Meeting, Boston, MA (29 Nov. - 4 Dec. 1992)

39. C. Viney, A.E. Huber, D.L. Dunaway, P. Yager, K. Kerkam and S.T. Case
"Optical Characterization of Silk Secretions and Fibers"
Workshop on *Silks: Biology, Structure, Properties, Genetics* (sponsored by the Division of Polymer Chemistry, American Chemical Society), University of Virginia, Charlottesville, VA (28-29 Jan. 1993)

40. C. Viney and W.S. Putnam
"Characterization of Sheared Liquid Crystalline Polymers by Light Microscopy"
Invited Paper, *51st Annual Meeting of the Microscopy Society of America (MSA)*, Symposium on *Aspects of Imaging in Polymer Science*, Cincinnati, OH (1-6 Aug. 1993)

41. B.L. Thiel, D.D. Kunkel, K.B. Guess and C. Viney
"Chemical and Physical Microstructure of Spider Dragline"
Invited Paper, *Materials Research Society (MRS) 1993 Fall Meeting*, Symposium on *Biomolecular Materials by Design*, Boston, MA (28 Nov. - 3 Dec. 1993)

42. C. Viney
"Lessons from Natural Materials: Processing and Microstructural Control"
Whitaker Distinguished Lecture in Bio-Based Engineering, Department of Bioengineering, University of Utah, Salt Lake City, UT (28 Feb. 1994)

43. C. Viney and B.L. Thiel
"Hierarchical Molecular Order in Silk Secretions and Fibers"
Invited Paper, *American Chemical Society (ACS) 207th National Meeting*, Symposium on *Industrial Biotechnological Polymers*, San Diego, CA (13-17 March 1994)
[Abstract published in *Abstracts of Papers of the American Chemical Society* 207(2):81-BTEC, 1994]

44. C. Viney
"Molecular Order in Silk Secretions and Fibres"
Invited Presentation, Department of Materials, University of Oxford, UK (13 June 1994)

45. C. Viney
"Spider Silk: Natural Lessons in Engineered Materials"
Invited Speaker (Spring 1994 Program: *Engineering for Value*), Courtaulds Strategic Research & Technology, Coventry, UK (23 June 1994)

46. C. Viney
"Nature's Material Assets"
Invited Presentation, ASM International, Puget Sound Chapter, Seattle, WA (8 Nov. 1994)

47. C. Viney
"The Hierarchical Structure of Silk: a study of *Nephila clavipes* major ampullate fibre"
Invited Paper, Workshop on the *Science of Spider Silk*, Hoechst Celanese Corporation, Summit, NJ (24 March 1995)

48. C. Viney
"The Matter of Nature"
Invited Presentation, Polymers and Colloids Group, Cavendish Laboratory (Department of Physics), Cambridge University, UK (26 May 1995)

49. C. Viney
"Nature's Material Assets"
Invited Presentation, Raychem, Swindon, UK (5 June 1995)

50. C. Viney and B.L. Thiel
"The Hierarchical Structure of Silk: a study of drag line (major ampullate) fiber from *Nephila clavipes* spiders"
17th Biennial Conference on *Physical Aspects of Polymer Science*, University of Leeds, UK (6-8 Sept. 1995)

51. C. Viney
"Natural Paradigms for Advanced Polymers"
Invited Paper, *Advances in Polymer Materials* Meeting, Oxford, UK (3 Oct. 1995)

52. C. Viney and B.L. Thiel
"Major Ampullate Spider Silk: archetypal concepts for assembling new polymer fibres"
Invited Paper, *Materials Research Society (MRS) 1995 Fall Meeting*, Symposium on *Self-Assembling Materials and Structures*, Boston, MA (26 Nov. - 1 Dec. 1995)

53. C. Viney
"Smart Assembly of Polymer Fibres: lessons from major ampullate spider silk"
Invited Paper, SPIE Workshop on *Smart Functions in Biological Systems: a Guide for Advanced Materials*, San Diego, CA (29 Feb. - 2 March 1996)

54. C. Viney and B.L. Thiel
"Hierarchical Biological Composites: smart engineering with imperfect crystals"
Invited Paper, Royal Microscopical Society Conference on *Microscopy of Composite Materials III*, Oxford, UK (1-3 April 1996)
[Abstract published in *Proceedings of the Royal Microscopical Society* 31(1):33-34, 1996]

55. C. Viney
"From Engineered Protein to Engineering Polymer: can silk be made to order?"
Invited Paper, High Polymer Research Group Conference on *Structural Hierarchy in Polymers*, Moretonhampstead, UK (30 April - 2 May 1996)

56. C. Viney
"The Matter of Nature: silk and other liquid crystalline biological polymers"
Invited Presentation, H.H. Wills Physics Laboratory, University of Bristol, UK (29 May 1996)

57. C. Viney
"Smart Assembly of Polymer Fibres: lessons from major ampullate spider silk"
Invited Presentation, Defence Clothing and Textiles Agency, Colchester, UK (17 July 1996)

58. C. Viney
"Bioengineering: from revelation to revolution"
Featured Speaker, *National Bioengineering Career Symposium*, University of Washington, Seattle, WA (15-16 Aug. 1996)

59. C. Viney
"Molecular Self Assembly in Spider Silk"
Invited Paper, Institute of Materials Workshop on *Biomimetics: Ideas from Nature are SMART*, Reading, UK (23 Sept. 1996)

60. C. Viney
"Silk Polymers: Progress through Arachnophilia"
Invited Presentation, Department of Physics, University of Reading, UK (29 October 1996)

61. C. Viney
"Bioengineered Materials: can bugs build a bicycle?"
Featured Speaker, Cambridge University Scientific Society, Cambridge, UK (14 Nov. 1996)

62. C. Viney
"Silk Polymers: Progress through Arachnophilia"
Invited Presentation, Departamento de Ciencia de Materiales, Universidad Politecnica de Madrid, Spain (10 Dec. 1996)

63. C. Viney
"Spider Silks"
Bedson Lecture, Department of Chemistry / RSC local section, University of Newcastle upon Tyne, UK (14 Jan. 1997)

64. C. Viney
"Spider Silk"
Invited Presentation, Manchester Materials Science Centre, University of Manchester / UMIST, UK (5 March 1997)

65. C. Viney
"Thermal Analysis and Scanning Calorimetry of Natural Polymers"
Invited Paper, *The Second UK National Thermal Analysis and Calorimetry Symposium* (Royal Society of Chemistry), together with *Thermal Analysis of Advanced Materials II* (Oxford Centre for Advanced Materials and Composites), Oxford, UK (14-15 April 1997)

66. C. Viney
"Silk, Slugs, Slime and Scanning Calorimetry"
Invited Presentation, *Perkin Elmer Thermal Analysis Users' Meeting*, Harrogate, UK (15 Oct. 1997)

67. C. Viney
"Molecules, Microbes and Engineering Materials"
Featured Speaker, Cardiff Scientific Society, Cardiff, UK (12 Nov. 1997)

68. C. Viney
"The Properties of Spider Silk"
Invited Presentation, Department of Chemistry and Applied Chemistry, University of Salford, UK (26 Nov. 1997)

69. C. Viney
"Natural Routes to Novel Materials: side-chain, supramolecular and chimeric liquid crystals"
Invited Presentation, Division of Chemistry, and Division of Materials Research, National Science Foundation, Washington, DC (8 Jan. 1998)

70. C. Viney
"Biological Liquid Crystalline Polymers: side-chain, supramolecular and chimeric systems"
Invited Presentation, Department of Materials Science, University of Delaware, Newark, DE (12 Jan. 1998)

71. C. Viney
"Biological Liquid Crystalline Polymers: supramolecular, side-chain and chimeric systems"
Invited Presentation, Department of Chemistry, University of Hull, UK (11 March 1998)

72. C. Viney
"Natural Routes to Novel Materials: silks, slimes and smart liquid crystals"
Invited Presentation, *Mass Transport to Medicine: Designer Materials for the New Millennium* seminar at ISIS Innovation Limited, Oxford, UK (12 March 1998)

73. C. Viney
"Gazing at Liquid Crystal Balls: molecular order in silk, mucus and other biological polymers"
Invited Presentation, School of Metallurgy and Materials, University of Birmingham, UK (18 March 1998)

74. C. Viney
"Silk: Molecules, Microstructures and Mechanical Properties"
Invited Presentation, Department of Chemistry, University of Southampton, UK (21 April 1998)

75. C. Viney
"From Natural Chemistry to Designed Materials"
Invited Presentation, Department of Chemistry, Heriot-Watt University, Edinburgh, UK (28 May 1998)

76. J. Barghout, S. Carmichael, B. Thiel and C. Viney
"Structural Models of Molecular Order in Silk Fibres"
Second International Workshop on Silk, University of Virginia, Charlottesville, VA (14-17 June 1998)

77. E. Renuart and C. Viney
"Biological Fibrous Materials: Relationships between Structure and Properties"
Invited Lecture, *Biomateriales estructurales. Relaciones entre estructura y propiedades. Diseño de biomateriales y diseño con biomateriales.*
Universidad Internacional Menéndez Pelayo, Santander, Spain (9 July 1998)

78. C. Viney
"Silk Fibres: Design"
Invited Lecture, *Biomateriales estructurales. Relaciones entre estructura y propiedades. Diseño de biomateriales y diseño con biomateriales.*
Universidad Internacional Menéndez Pelayo, Santander, Spain (10 July 1998)

79. C. Viney
"Spiders, Slugs and Mutant Bugs"
Invited Presentation, Durham University Chemical Society, Durham, UK (23 Feb. 1999)

80. C. Viney
"Material Lessons from Spiders: from 1307 (?) to 1999 and beyond"
Invited Presentation, Heriot-Watt University Scottish Borders Campus, Galashiels, UK (3 March 1999)

81. C. Viney
"Supramolecular Order in Biological Polymers: Silk, Mucus and Levan/DNA"
Invited Presentation, National Institute of Agrobiological Resources, Tsukuba, Japan (29 March 1999)

82. C. Viney
"Supramolecular Order in Biological Polymers: Silk, Mucus and Levan/DNA"
Invited Presentation, Department of Biomaterial Sciences, Graduate School of Agricultural and Life Science, University of Tokyo, Japan (30 March 1999)

83. C. Viney
"Supramolecular and Chimeric Liquid Crystal Phases"
Invited Paper, *Biomolecular Folding and Self-Assembly Conference* held at the *Institute of Physics 1999 Congress*, Salford, UK (12-14 April 1999)

84. C. Viney
"Supramolecular Ball-and-Stick Models of Biological Polymers: Insights from Light Microscopy"
Invited Opening Paper, Royal Microscopical Society Meeting on *Microscopy of Biomaterials III*, London, UK (14 April 1999)

85. C. Viney
"Optical Birefringence: a Mature Technique to Probe Advanced Materials"
Invited Paper, *European Science Foundation Workshop on Silk*, Oxford, UK (15-18 April 1999)

86. C. Viney
"Diverse Themes on Common Threads"
Invited Presentation, Centre for Self-Organising Molecular Systems, University of Leeds, UK (21 January 2000)

87. C. Viney
"Diverse Themes on Common Threads"
Invited Presentation, Physical Chemistry Colloquium, Department of Chemistry, University of Edinburgh, UK (9 February 2000)

88. C. Viney
"Supramolecular Self-Assembly: Nature's Way to Useful Fibres"
Invited Presentation, Colloquium in Organic Chemistry, Department of Pure And Applied Chemistry, University of Strathclyde, Glasgow, UK (16 February 2000)

89. C. Viney
"Tenacious Threads and Slippery Slimes: material lessons from Nature"
Invited Presentation, combined event: Lecture, Manchester Metallurgical Society / Research Colloquium, Manchester Materials Science Centre
University of Manchester / UMIST, Manchester, UK (28 March 2000)

90. C. Viney
"Silk and Slime: Successful Supramolecular Science"
Keynote Lecture, *Institute of Materials Congress 2000: Materials for the 21st Century*, Cirencester, UK (12-14 April 2000)

91. C. Viney
"Opportunities and Challenges with Biological Polymers"
Invited Presentation, *Scottish Polymer Technology Network: Biomolecules Club Meeting*, Riccarton, UK (4 July 2000)

92. C. Viney
"Bottom-up approaches to new high-performance fibres"
Invited Paper, *New Directions for Research in Biological Material*s (Symposium held at *Experimental Biology 2000 - Milestones and Goals*, sponsored by the Society for Experimental Biology), Cambridge, UK (30 July - 3 August 2000)

93. C. Viney
"Silk and Slime: fibre-forming complex fluids in Nature"
Invited Paper, *Complex Fluids 2000* (in association with EPSRC Soft Matter Network, RSC Statistical Mechanics and Thermodynamics Group, and IoP Polymer Physics Group), Sheffield, UK (11-13 September 2000)

94. C. Viney
"Spider Silk and Slug Slime: common LCPs with uncommon properties"
Invited Lecture, *2nd International Conference on Chemistry and Characterisation of Mesophase Materials*, Bayreuth, Germany (17-19 September 2000)

95. C. Viney
"Natural Lessons for Materials Chemistry"
Invited Presentation, Royal Society of Chemistry Mid-Scotland Section, BP Visitors Centre, Grangemouth, UK (28 September 2000)

96. C. Viney
"Fracture of Natural Polymeric Fibres"
Invited Paper, *High Performance Fibers* (EuroConference on Fiber Fracture), Cala Viñas, Mallorca, Spain (19-24 October 2000)

97. C. Viney
"New Materials from the Zoo"
Invited Presentation, Department of Chemistry, Imperial College of Science, Technology and Medicine, London, UK (17 November 2000)

98. C. Viney
"New Materials from the Zoo"
Invited Presentation, Annual Joint Meeting of the Institute of Physics Yorkshire Branch and the Royal Society of Chemistry Central Yorkshire Section
Department of Chemistry, University of York, UK (24 January 2001)

99. C. Viney
"Can Bioengineered Bugs Build a Better Bicycle?"
Invited Presentation, Glasgow University Alchemists' Club, Glasgow, UK (1 February 2001)

100. C. Viney
"New Materials from the Zoo"
Special Lecture, Oxford Materials Society
University of Oxford, Oxford, UK (13 February 2001)

101. C. Viney
"New Materials from the Zoo"
Invited Presentation, Department of Chemistry, University of Aberdeen, Aberdeen, UK (21 February 2001)

102. C. Viney
"New Materials from the Zoo"
Invited Presentation, Department of Chemistry, University of Missouri St Louis, St Louis, MO, USA (26 February 2001)

103. C. Viney
"New Materials from the Zoo"
Invited Presentation, ICASE Colloquium, NASA Langley Research Center, Hampton, VA, USA (1 March 2001)

104. C. Viney
"New Materials from the Zoo"
Invited Presentation, Department of Applied Mathematics, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA (2 March 2001)

105. C. Viney
"New Polymers from our Oldest Suppliers: building on 4 billion years of research….."
Plenary opening paper, *Polymer '01. The New Polymers: Design, Development & Applications*, Bath, UK (9-11 April 2001)

106. C. Viney
"Natural Lessons for Materials Chemistry"
Invited Paper, High Polymer Research Group Conference on *Reacting and Responding Polymers*, Moretonhampstead, UK (30 April - 2 May 2001)

107. C. Viney
"Some Polymer Problems and their Natural Solutions"
Invited Presentation, *Differential Equations and Applications Seminar*, Oxford Centre for Industrial and Applied Mathematics, University of Oxford, Oxford, UK (10 May 2001)

108. C. Viney
"Silk and Slime: Successful Supramolecular Science"
Invited Presentation, joint meeting of the Tyne and Wear Materials Society and the North-East Polymers Association
University of Newcastle, Newcastle-Upon-Tyne, UK (15 May 2001)

109. C. Viney
"Biological Fibres"
Invited Lecture, *Materiales biológicos estructurales*
Universidad Internacional Menéndez Pelayo, Santander, Spain (12 July 2001)

110. C. Viney
"Spider Silk Fibres"
Invited Lecture, *Materiales biológicos estructurales*
Universidad Internacional Menéndez Pelayo, Santander, Spain (12 July 2001)

111. C. Viney
"Self Assembly of Biological Materials"
Invited Lecture, *Materiales biológicos estructurales*
Universidad Internacional Menéndez Pelayo, Santander, Spain (13 July 2001)

112. C. Viney
"Biomimetics – a future vision"
Invited Presentation, *Scottish Materials Exchange III: Biomaterials*, Glasgow Science Centre, Glasgow, UK (7 November 2001)

113. C. Viney
"Spiders and other materials scientists in nature"
Invited Presentation, Department of Physics and Astronomy, University of Edinburgh, UK (15 November 2001)

114. C. Viney
"Should Chemists Copy Nature's Materials?"
Walker Memorial Lecture, Department of Chemistry, University of Edinburgh, UK (30 January 2002)

115. C. Viney
"Supramolecular Liquid Crystallinity in Natural and Synthetic Materials"
Invited Presentation, *Fifth Annual Paul Flory Conference on Physical and Macromolecular Chemistry*, Stanford University, Stanford, CA, USA (22 February 2002)

116. C. Viney
"Supramolecular Liquid Crystallinity in Natural and Synthetic Materials"
Invited Presentation, Lawrence Livermore National Laboratory, Livermore, CA, USA (25 February 2002)

117. C. Viney
"New Materials from the Zoo"
Invited Presentation, Division of Engineering, University of California at Merced, Castle Aviation and Development Center, Atwater, CA, USA (26 February 2002)

118. C. Viney
"Should Chemists Copy Nature's Materials?"
Invited Presentation, Department of Chemistry, University of Missouri St Louis, St Louis, MO, USA (1 March 2002)

119. C. Viney
"Does Self-Assembly Produce Good Materials?"
Invited Presentation, *Royal Society of Chemistry* ***Interdisciplinary Awards Symposium*** *on Biological Self-Assembly*, Cambridge, UK (23 April 2002)

120. C. Viney
"Structures That Make Themselves"
Invited Lecture, Cambridge University Government Policy Programme, meeting on *Nanotechnology: Exploiting the Millimicro*, Sidney Sussex College, Cambridge, UK (26 April 2002)

121. C. Viney
"Should Industry Copy Nature's Materials?"
Invited Presentation, Procter and Gamble (Rusham Park Technology Centre), Egham, UK (15 May 2002)

122. C. Viney
"Some Polymer Problems and their Natural Solutions"
Invited Presentation, Industrial and Applied Mathematics Seminar, Department of Mathematics, Heriot-Watt University, Edinburgh, UK (29 May 2002)

123. C. Viney
"New Materials from the Zoo"
Invited Presentation, Polymers and Colloids Group, Cavendish Laboratory (Department of Physics), Cambridge University, UK (31 May 2002)

124. C. Viney
"Nanomaterials Inspired by Nature"
Invited Lecture, *Nano-Biomateriales*
Universidad Internacional Menéndez Pelayo, Santander, Spain (12 July 2002)

125. C. Viney
"Self-assembled fibres as engineering materials"
Invited Paper, *High Performance Fibers* (EuroConference on Self-Assembling Fibrous Materials), Bad Herrenalb, Germany (7-12 September 2002)

126. C. Viney
"Is Spider Silk a Useful Material?"
Invited Presentation, Department of Textile Sciences, University of Massachusetts Dartmouth, North Dartmouth, MA, USA (20 September 2002)

127. C. Viney
"Is Spider Silk a Useful Material?"
Invited Presentation, Joint UC Seminar Series (UC Davis and UC Merced), Department of Chemical Engineering and Materials Science, University of California at Davis, Davis, CA, USA (24 September 2002)

128. C. Viney
"Spider Silk - the stuff of nightmares or the stuff of dreams?"
Hallowe'en Lecture, University of St Andrews Chemical Society, St Andrews, UK (30 October 2002)

129. C. Viney
"Is Spider Silk a Useful Material?"
Invited Presentation, Department of Bioengineering, University of Washington, Seattle, WA (19 December 2003)

130. N.A. Morrison, F.I. Bell, A. Beautrait, J. Ritchie, C. Smith, I.J. McEwen, and C. Viney
"Do Natural Silks Make Good Engineering Materials?"
Materials Research Society (MRS) 2004 Spring Meeting, Symposium on *Biological and Bio-Inspired Materials and Devices*, San Francisco, CA (12-16 April 2004)

131. C. Viney, N.A. Morrison, F.I. Bell, A. Beautrait, J. Ritchie, C. Smith, and I.J. McEwen
"Is Spider Silk a Useful Biomaterial?"
The 5th University of California Systemwide Bioengineering Symposium, Irvine, CA (26-28 June 2004)

132. C. Viney
"How Nature Does It: materials properties of biological substrates"
Invited Overview, *Biomaterials SPARK* Workshop*, Unilever Research Centre, Port Sunlight, UK (30 September – 1 October 2004)
**S*ymposium to *P*romote *A*wareness of *R*esearch *K*nowledge

133. J. Ritchie, C. Smith, F.I. Bell, I.J. McEwen, and C. Viney
"Effects of Wetting and Desiccation on the Creep Properties of Natural Silk"
Materials Research Society (MRS) 2004 Fall Meeting, Symposium on *Mechanical Properties of Bio-Inspired and Biological Materials*, Boston, MA (29 Nov. - 3 Dec. 2004)

134. C. Viney
"Stress relaxation and creep of silk"
Keynote Lecture, *Plasticity 2005*, Symposium on *Biomaterials and Biological Materials*, Lihue, Kauai, HI (3-8 January 2005)

135. C. Viney
"Hanging by a thread without being let down: what can engineers usefully learn from spider silk?"
Presentation as **Invited Session Chair**, *3rd International Symposium on Advanced Biomaterials / Biomechanics*, Montreal, Canada (3-6 April 2005)

136. E. Reed, M.R. Dunlap, J. Jasinski, and C. Viney
"Microstructure, Nanostructure & Properties of the Wasp Petiole"
Materials Research Society (MRS) 2006 Fall Meeting, Symposium on *Mechanics of Biological and Bioinspired Materials*, Boston, MA (27 Nov. - 1 Dec. 2006)

137. A. Zielinski, E. Resner, and C. Viney
"Networking with Nature for Lessons that Gel"
Invited Presentation, *Materials Research Society (MRS) 2007 Fall Meeting*, Symposium on *Bioinspired Polymer Gels and Networks*, Boston, MA (26-30 Nov. 2007)

Christopher Viney

Outreach and Service Presentations (selected)

---

1. Everett Community College, Everett, WA (20 Nov. 1989)
   Addressed technology students, on topical issues in Materials Science & Engineering

2. ASM International, Puget Sound Chapter, Seattle, WA (13 March 1990)
   "Facets of Materials Science"

3. Challenger Elementary School, Issaquah, WA (15 March 1990)
   Addressed school assembly on aerospace and materials, under the theme "Challenger"

4. *Women in Engineering* Program, University of Washington, Seattle, WA (11 May 1990)
   Addressed pre-engineering undergraduate students on career opportunities in Materials Science & Engineering

5. Pacific Science Center, Seattle, WA (11-26 Aug. 1990)
   Co-organiser and demonstrator, "Micro Visions - Scope it Out" (provided equipment and expertise for this microscopy-related exhibition)

6. Saturday Seminar Series, University of Washington, Seattle, WA (3 Nov. 1990)
   "Tailored Materials: Engineering the Fabric of the Future"

7. SAMPE (Society for the Advancement of Material and Process Engineering) Seattle Chapter, Tukwila, WA (12 Feb. 1992)
   Presentation on biologically inspired materials engineering

8. Engineering Open House, University of Washington, Seattle, WA (25 April 1992)
   "Spider Tales and Mollusk Trails"

9. Engineering Alumni Association, University of Washington, Seattle, WA (28 May 1992)
   "Engineered Materials Innovation: is it Second Nature?"

10. Federal Way Kiwanis Club, Federal Way, WA (29 July 1992)
    Addressed service club members on "Bioengineered Materials: Becoming Second Nature?"

11. Mercer Island ProBus Club, Mercer Island, WA (5 Aug. 1992)
    Addressed service club members on "Bioengineered Materials: Becoming Second Nature?"

12. Saturday Seminar Series, University of Washington, Seattle, WA (19 Sept. 1992)
    "Spiders, Snails and Kangaroo Tails: Nature Inspiring Science"

13. ASM International, Puget Sound Chapter, Seattle, WA (Feb. 1993)
    Contributions to *Metallurgy for the Non Metallurgist* (3 hours of presentations on casting / hot working / cold working)

14. Mid-Columbia Regional Science and Engineering Fair, Richland, WA (20 March 1993)
Guest Speaker

15. Workshop on *Engineering and the News Media: Making it Work*, sponsored by the American Society for Engineering Education (UW Chapter), College of Engineering, University of Washington, Seattle, WA (9 Nov. 1993)
Presentation titled "A faculty perspective"

16. Wedgewood Elementary School, Seattle, WA (14 Jan. 1994)
Addressed two 3rd-grade classes, on lessons from spiders and slugs

17. Student Union Facilities Advisory Board, University of Washington, Seattle, WA (20 Jan. 1994)
Last Lecture Series presentation on "Simple versus Simplistic: a Distinction Worthy of Learning"

18. Challenger Elementary School, Issaquah, WA (26 Jan. 1994)
Addressed 5th-grade class, on lessons from spiders and slugs

19. 8th Annual Northwest Pear Research Review (convened by Washington Tree Fruit Research Commission), Wenatchee, WA (14 Feb. 1994)
"New Materials from Spiders, Slugs and Viruses"

20. 1994 Spring Conference of the Washington Technology Educators' Association (WETA) and the Trade and Industrial, Technical and Health Occupations (T&I, T&HO) Instructors' Section of the Washington Vocational Association, Wenatchee, WA (5 March 1994)
"Bio-Molecular Engineering"

21. Engineering Open House, University of Washington, Seattle, WA (22 April 1994)
"Natural Lessons for Engineered Materials: From the Stuff of Nightmares to the Stuff of Dreams"

22. Bellevue ProBus Club, Bellevue, WA (19 May 1994)
"Natural Lessons for Engineered Materials"

23. ASM International, Puget Sound Chapter, Seattle, WA (8 Nov. 1994)
"Nature's Material Assets"

24-27. Department of Materials, University of Oxford, England (22, 23, 28 & 29 March 1995)
Addresses to 6th-form pupils and teachers: "Nature's Materials"

28. Wycombe Abbey School, High Wycombe, England (21 June 1995)
Address to Science Club: "The Nature of Matter & The Matter of Nature"

29. Department of Materials, University of Oxford, England (18 March 1996)
Public lecture / demonstration (in association with *SET 96*): "Molecules and Materials: From Atom to Appliance"

30-33. Department of Materials, University of Oxford, England (20, 21, 26 & 27 March 1996)
Addresses to 6th-form pupils and teachers: "What is Materials Science?"

34-35. Department of Materials, University of Oxford, England (25 & 26 June 1996)
Public lectures (in association with *Oxford Science Open Days*): "Materials in YOUR Future"

36. Winchester College, Winchester, England (30 Sept. 1996)
Address to Science School 6th-form pupils and teachers: "The Nature of Matter & The Matter of Nature"

37. The Dragon School, Oxford, England (11 Oct. 1996)
Address to Science Club: "Materials Science"

38. Department of Materials, University of Oxford, England (7 Nov. 1996)
Address to 1st year 6th-form pupils and teachers visiting from Radley College, Abingdon: "What is Materials Science?"

39. North London Collegiate School, Edgware, England (27 Feb. 1997)
Address to Science Society: "The Nature of Stuff, and the Stuff of Nature"

40-43. Department of Materials, University of Oxford, England (17 & 18 March; 17 & 18 April, 1997)
Addresses to 6th-form pupils and teachers: "What is Materials Science?"

44. Department of Materials, University of Oxford, England (20 March 1997)
Public lecture (in association with *SET 97*): "Materials from Microbes: can bacteria build a bicycle?"

45. St John's College, University of Oxford, England (14 June 1997)
Target Schools Open Day address to 6th-form pupils: "Degree Courses in Materials Science"

46-47. Department of Materials, University of Oxford, England (1 & 2 July 1997)
Public lectures (in association with *Oxford Science Open Days*): "New Materials, New Horizons"

48-51. Department of Materials, University of Oxford, England (19, 20, 23 & 24 March 1998)
Addresses to 6th-form pupils and teachers: "What is Materials Science?"

52. The Dragon School, Oxford, England (8 May 1998)
Address to Science Club: "Materials Science"

53-54. Department of Materials, University of Oxford, England (30 June & 1 July 1998)
Public lectures (in association with *Oxford Science Open Days*): "Materials Beyond the Millennium"

55. Department of Materials, University of Oxford, England (19 Oct. 1998)
Address to 1st year 6th-form pupils and teachers visiting from The Haberdashers' Aske's School, Borehamwood: "What is Materials Science?"

56. Department of Chemistry, Heriot-Watt University, Edinburgh, Scotland (30 June 1999)
Study Week for Teachers of Chemistry presentation on: "Nature's Lessons for Materials Chemistry"

57. The Royal Museum of Scotland, Edinburgh, Scotland (22 Nov. 1999)
Public lecture (in association with the Royal Society of Chemistry's *Chemistry Week 1999*): "New Materials from Nature's Chemists: Lessons from Spiders, Silkworms, Slugs and Giraffes"

58-59. Glen Urquhart High School, Drumnadrochit, Inverness-shire, Scotland (26 Jan. 2000)
Two addresses to mixed groups of Chemistry / Physics / Biology pupils:
- "From the Stuff of Nightmares to the Stuff of Dreams" (years S3-S6)
- "Why You Don't Digest Yourself….."(years S3-S6)

60-61. St Benet Biscop Catholic High School, Bedlington, Northumberland, England (2 Feb. 2000)
Two addresses to mixed groups of Chemistry / Physics / Biology pupils:
- "Spiders, Slugs and Chemist Bugs" (year 11)
- "Why You Don't Digest Yourself….." (year 12)

62. Stewart House Men's Club, Edinburgh, Scotland (4 Feb. 2000)
Address to association of retired business and professional men: "Spider Silk"

63-65. Cramlington High School, Cramlington, Northumberland, England (17 Feb. 2000)
Three addresses to mixed groups of Chemistry / Physics / Biology pupils:
- "From the Stuff of Nightmares to the Stuff of Dreams" (years 12-13)
- "Why You Don't Digest Yourself….." (year 11)
- "Why You Don't Digest Yourself….." (year 11)

66-67. Portree High School, Portree, Isle of Skye, Scotland (3 March 2000)
Two addresses to mixed groups of Chemistry / Physics / Biology pupils:
- "Why You Don't Digest Yourself….." (years S4-S6)
- "Spiders, Slugs and Chemist Bugs" (years S5-S6)

68. Plockton High School, Plockton, Ross-shire, Scotland (3 March 2000)
Address to mixed group of Chemistry / Physics / Biology pupils: "Spiders, Slugs and Chemist Bugs" (years S4-S6)

69. Elgin Academy, Elgin, Moray, Scotland (9 March 2000)
Address to mixed group of Chemistry pupils: "Spiders, Slugs and Chemist Bugs" (years S4-S6)
Other schools in attendance (all from Moray, Scotland): Buckie High School; Elgin High School; Keith Grammar School; Lossiemouth High School; Speyside High School.
Reported in *The Northern Scot* (Elgin), 10 March 2000

70. Grantown Grammar School, Grantown-on-Spey, Badenoch and Strathspey, Scotland (17 March 2000)
Address to mixed group of Science pupils: "From the Stuff of Nightmares to the Stuff of Dreams" (years S3-S6)
National Science Week event

71. St Aloysius' College, Glasgow, Scotland (23 March 2000)
Address to mixed group of Chemistry / Physics / Biology pupils: "Why You Don't Digest Yourself….." (years S5-S6)

72. The Royal Museum of Scotland, Edinburgh, Scotland (9 April 2000)
Public lecture (in association with the *12th Edinburgh International Science Festival*): " A Material World: Can Bioengineered Bugs Build a Better Bicycle?"

73. Heriot-Watt University, Edinburgh, Scotland (7 June 2000)
Inaugural lecture: "Back to Nature for New Materials"

74. Department of Chemistry, Heriot-Watt University, Edinburgh, Scotland (14 June 2000)
Address to participants (years S2-S3) in Regional Finals of *Salters' Festival of Chemistry*: "The Magic of Mucus: Slime, Slugs and SALT!"

75. Department of Chemistry, Heriot-Watt University, Edinburgh, Scotland (28 June 2000)
Study Week for Teachers of Chemistry presentation on: "Nature's Lessons for Materials Chemistry"

76. Edinburgh Academy, Edinburgh, Scotland (3 Nov. 2000)
Address to *Scientific and Mathematical Society*: "New Materials from the Zoo"

77. Gairloch High School, Gairloch, Wester Ross, Scotland (15 Dec. 2000)
Address to mixed group of Chemistry and Biology pupils: "The Marvel that's Mucus" (years S5-S6).
Individual meetings with the year 6 Chemistry pupils

78. Ross High School, Tranent, East Lothian, Scotland (19 Dec. 2000)
Address to mixed group of Chemistry and Biology pupils: "The Marvel that's Mucus" (years S5-S6)

79. Inveralmond Community High School, Livingston, West Lothian, Scotland (20 Dec. 2000)
Christmas Lecture – address to mixed group of Chemistry and Biology pupils: "Mucus: an essential ingredient of good body chemistry" (years S3-S5)

80. The Duchess's Community High School, Alnwick, Northumberland, England (21 Dec. 2000)
Christmas Lecture – address to mixed group of Chemistry / Biology / Physics pupils: "New Materials from the Zoo" (years 11-13)

81-82. The British Council School, Madrid, Spain (16 Jan. 2001)
Two addresses to mixed groups of Chemistry / Physics / Biology pupils: "New Materials from the Zoo" (level equivalent to 'Lower 6th')

83. Department of Chemistry, Heriot-Watt University, Edinburgh, Scotland (7 March 2001)
Address to invited year S5-S6 Chemistry pupils and teachers: "Good Stuff from Nature's Chemists"

84-85. Caldew School, Dalston (Carlisle), Cumbria, England (13 March 2001)
Two addresses to mixed groups of Chemistry and Physics pupils:
- "The Marvel that's Mucus" (years 11-12)
- "New Materials from the Zoo" (years 10-12)

86-87. Thurso High School, Thurso, Caithness, Scotland (21 March 2001)
Two addresses to (mainly) Chemistry pupils:
- "New Materials from the Zoo" (years S5-S6)
- "New Materials from the Zoo" (years S3-S4)

88. Braes High School. Falkirk, Scotland (26 March 2001)
Address to Chemistry pupils: "New Materials from the Zoo" (year S3)

89-90. William Howard School, Brampton, Cumbria, England (4 April 2001)
Two addresses to Chemistry pupils:
- "The Marvel that's Mucus" (year 8)
- "New Materials from the Zoo" (years 12-13)

91. Menzieshill High School, Dundee, Scotland (23 April 2001)
Address to Chemistry pupils: "New Materials from the Zoo" (years S5-S6)

92. Department of Chemistry, Heriot-Watt University, Edinburgh, Scotland (25 June 2001)
Study Week for Teachers of Chemistry presentation on: "Nature's Lessons for Materials Chemistry"

93. Lornshill Academy, Alloa, Clackmannanshire, Scotland (17 Dec. 2001)
Address to Chemistry pupils: "Stuff" (year S3)

94-95. Dumfries Academy, Dumfries, Scotland (16 Jan. 2002)
Two addresses:
- "Stuff" (year S4 Chemistry)
- "Stuff" (year S2 Chemistry and Biology; year S6 Chemistry)

96. Glasgow Academy, Glasgow, Scotland (31 Jan. 2002)
Address to Chemistry pupils: "New Materials from the Zoo" (years S5-S6)

97. Beaconhurst School, Bridge of Allan, Scotland (6 Feb. 2002)
Address to Chemistry and other science pupils: "New Materials from the Zoo" (years S2-S5)

98. Keith Grammar School, Keith, Moray, Scotland (7 Feb. 2002)
Address to Chemistry pupils: "New Materials from the Zoo" (year S3)

99. Holyrood Secondary School, Glasgow, Scotland (8 Feb. 2002)
Address to Chemistry and other science pupils: "Stuff" (years S2-S3)

100-101. Whitehill Secondary School, Glasgow, Scotland (14 Feb. 2002)
Two addresses to general Chemistry / Physics / Biology pupils: "Stuff" (year S2)

102. Trinity Academy, Edinburgh, Scotland (13 March 2002)
Address to Chemistry pupils: "New Materials from the Zoo" (year S4)

103-104. Millburn Academy, Inverness, Scotland (20 March 2002)
Two addresses to Chemistry pupils: "New Materials from the Zoo" (year S3)

105-106. Tain Royal Academy, Tain, Scotland (20 March 2002)
Two addresses to Chemistry pupils:
- "Stuff" (year S3)
- "Stuff" (year S4)

107-111. Arbroath Academy, Arbroath, Scotland (21 March 2002)
Five addresses to general Chemistry / Physics / Biology pupils: "Stuff" (years S1-S2)

112. Forrester High School, Broomhouse, Edinburgh, Scotland (22 March 2002)
Address to Chemistry pupils: "New Materials from the Zoo" (year S3)

113-114. Hirst High School, Ashington, Northumberland, England (9 May 2002)
Two addresses to GCSE Chemistry pupils:
- "New Materials from the Zoo" (year 11)
- "Stuff" (year 11)

115. Dean Park Primary School, Balerno, Scotland (5 June 2002)
"Learning from Nature" (year P3)

116. Glasgow Academy, Glasgow, Scotland (11 June 2002)
Address to Chemistry pupils: "Stuff" (year S2)

117. Department of Chemistry, Heriot-Watt University, Edinburgh, Scotland (26 June 2002)
Study Week for Teachers of Chemistry presentation on: "Nature's Lessons for Materials Chemistry"

118. St Serf's School, Edinburgh, Scotland (9 Dec. 2002)
Address to general Chemistry / Physics / Biology pupils: "Stuff" (year S2)

119-120. Kilchuimen Academy, Fort Augustus, Inverness-shire, Scotland (15 January 2003)
Two addresses to Chemistry / Physics / Biology pupils (the entire school):
- "Stuff" (years S1-S6)
- "New Materials from the Zoo" (years S1-S6)

121-122. Perth Grammar School, Perth, Scotland (20 Jan. 2003)
Two addresses:
- "New Materials from the Zoo" (year S5 Chemistry and Biology)
- "New Materials from the Zoo" (years S1-S2 general Chemistry / Physics / Biology pupils)

123-124. Torry Academy, Aberdeen, Scotland (21 Jan. 2003)
Two addresses to Chemistry / Physics / Biology pupils:
- "New Materials from the Zoo" (year S2)
- "Stuff" (year S1)

125-126. St Joseph's College, Dumfries, Scotland (28 Jan. 2003)
Two addresses to Chemistry / Biology pupils: "Stuff" (years S5-S6)

127-128. George Stephenson High School, Killingworth, Newcastle-upon-Tyne, England (29 Jan. 2003)
Two addresses to Chemistry / Physics / Biology pupils: "New Materials from the Zoo" (year 10)

129. Uddingston Grammar School, Uddingston, Glasgow, Scotland (10 Feb. 2003)
Address to general Chemistry / Physics / Biology pupils: "New Materials from the Zoo" (year S2)

130. *Association for Science Education, Scotland* (2003 Annual Meeting, St Machar Academy, Aberdeen, 8 March 2003)
Address to Chemistry / Biology / Physics secondary-school teachers: "Nature's Lessons for Materials Chemistry"

131. James Young High School, Livingston, Scotland (10 March 2003)
Address to Chemistry / Biology / Physics pupils: "New Materials from the Zoo" (year S3)

132. Lornshill Academy, Alloa, Clackmannanshire, Scotland (12 March 2003)
Address to Chemistry pupils: "Stuff" (year S3)

133- Hookergate School, Rowlands Gill, Tyne & Wear, England (13 March 2003)
134. Two addresses to Chemistry pupils:
- "New Materials from the Zoo" (year 9)
- "New Materials from the Zoo" (year 10)

135- Websters High School, Kirriemuir, Angus, Scotland (17 March 2003)
136. Two addresses to Chemistry pupils: "Stuff" (year S2)

137- Breadalbane Academy, Aberfeldy, Perthshire, Scotland (26 March 2003)
138. Two addresses to general Chemistry / Biology / Physics pupils: "New Materials from the Zoo" (year S2)

139. Coltness High School, Wishaw, North Lanarkshire, Scotland (27 March 2003)
Address to Chemistry / Biology pupils: "New Materials from the Zoo" (years S4-S5)

140. Dean Park Primary School, Balerno, Scotland (31 March 2003)
"Atoms and Molecules" (year P4)

141. Kingussie High School, Kingussie, Inverness-shire, Scotland (2 April 2003)
Address to general Chemistry / Biology / Physics pupils: "New Materials from the Zoo" (year S2)

142. St Serf's School, Edinburgh, Scotland (5 May 2003, the official opening of the new science laboratory and classroom block)
Address to pupils, parents, teachers, Board of Governors and alumni: "Education, Science and the Future" (followed by cutting the ribbon and declaring the facilities open)

143. Department of Chemistry, Heriot-Watt University, Edinburgh, Scotland (26 June 2003)
Study Week for Teachers of Chemistry presentation on: "Nature's Lessons for Materials Chemistry"

144. San Joaquin Valley University of California Alumni Network, Atwater, CA (23 Oct. 2003)
"Learning from the Natural World"

145- Tenaya Middle School, Merced, CA (31 Oct. 2003)
147. Addressed one 6th-grade class and two 7th-grade classes, on "Stuff"
Reported in the *Merced Sun-Star*, 1 November 2003, pg. A1

148. Merced College, Merced, CA (12 Nov. 2003)
Addressed *Introduction to Engineering* students, on "Nature's Lessons for Engineered Materials"

149. Castle-Atwater Kiwanis Club, Atwater, CA (20 Nov. 2003)
Addressed service club members on "New Materials from the Zoo: learning from the natural world"

150. Merced County Career Partnership Technology Industry Day, Merced County Office of Education, Merced, CA (11 Dec. 2003)
Keynote address: "Computers, Technology and Related Careers"

151. Merced College, Merced, CA (11 Feb. 2004)
Addressed *Introduction to Engineering* students, on "Nature's Lessons for Engineered Materials"

152. Challenger Learning Center for Space Science Education, and Castle Science & Technology Center, Atwater, CA (21 Feb. 2004)
Century of Powered Flight Foundation Lecture Series
Address to general audience: "Materials that Allowed Airplanes to Fly"

153. Visalia Convention Center, Visalia, CA (6 May 2004)
UC Merced Educator Update Seminar presentation on: "Learning from the Natural World"

154. McSwain Elementary School, Merced, CA (13 May 2004)
Address to 4th-grade class: "The Power of Numbers"

155. Challenger Learning Center for Space Science Education, and Castle Science & Technology Center, Atwater, CA (15 May 2004)
Century of Powered Flight Foundation Lecture Series
Address to general audience: "Space Age Materials: from the Stuff of Nightmares to the Stuff of Dreams"

156. Kiwanis Club of Merced, Merced, CA (19 May 2004)
Addressed service club members on "Material Lessons from Nature"

157-158. University of California at Merced, *Health Career Day*, Atwater, CA (17 Sept. 2004)
Two addresses to junior high, high school, and community college students: "Engineering Healthcare with Lessons from the Zoo"

159-163. Mt Whitney High School, Visalia, CA (21 Sept. 2004)
Five addresses to mixed groups of Algebra II, Pre-Calculus, Calculus, Computer Programming, Statistics, Physics, Biology, and Honors Biology students (grades 9-12): "Learning from the Natural World: a pathway to Bioengineering"

164. University of California at Merced, Atwater, CA (13 Oct. 2004)
SCOPE (State Capital Outlay and Planning Evaluation) Visit
Presentation to staff from the California Legislature, the Legislative Analyst Office (LAO), the Department of Finance (DOF), the California Postsecondary Education Commission (CPEC), and the University of California Office of the President (UCOP) Budget Office: "Engineering our Future with Lessons from Nature"

165. Merced College, Merced, CA (20 Oct. 2004)
Addressed *Introduction to Engineering* students, on "Nature's Lessons for Engineered Materials"

166-168. Mitchell Senior Elementary School, Atwater, CA (3 Nov. 2004)
Addressed three 8th-grade classes, on "Stuff"

169-171. Mitchell Senior Elementary School, Atwater, CA (10 Nov. 2004)
Addressed three 8th-grade classes, on "Stuff"

172-174. University of California at Merced, *Engineering Conference: Careers and the Academic Program at UC Merced*, Atwater, CA (13 Nov. 2004)
Three addresses to high school juniors, seniors and their parents: "Bioengineering: Inventions for the Future of Healthcare"

175- Peggy Heller Elementary School, Atwater, CA (17 Nov. 2004)
176. Addressed two 5th-grade classes, on "Learning from Nature"

177. University of California at Merced, *UC Merced Senior Parent Night*, Atwater, CA (17 Nov. 2004)
Address to high school seniors and their parents: "Life at the Frontier"

178- Bellevue Elementary School, Atwater, CA (15 Dec. 2004)
179. Addressed two 5th-grade classes, on "Learning from Nature"

180. *4-H Leadership Conference of Regional Teens* (*LCORT,* 2005 Annual Meeting, Wonder Valley Ranch, Sanger, CA, 28-30 Jan. 2005)
Address to 360 delegates (7th-, 8th- and 9th-grade), plus leadership team members (older high school students) and adult chaperones, from Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, San Benito, Santa Cruz, Stanislaus, Tulare and Tuolumne Counties: "Survival at the Frontiers of Knowledge"

181. McSwain 4-H Club, McSwain Elementary School, Merced, CA (16 Feb. 2005)
Addressed General Meeting, on "Learning from Nature"

182. Merced Group of the Sierra Club, Merced, CA (17 March 2005)
Addressed Group members on "Life at the Frontier: using Nature's secrets to manufacture new products"

183. G.A.T.E. (Gifted and Talented Education) Program, Bellevue Elementary School, Atwater, CA (24 March 2005)
Addressed group of 3rd-grade through 6th-grade students, on "Stuff"

184. Kern County Regional Science Fair, Bakersfield Convention Center, Bakersfield, CA (13 April 2005)
Keynote address to >800 4th-grade through 12th-grade students, plus teachers and parents, on "Nature's Lessons for Tomorrow's Engineer"

185. Merced College, Merced, CA (18 April 2005)
Addressed *Introduction to Engineering* students, on "Nature's Lessons for Engineered Materials"

186. Waterford High School, Waterford, CA (13 May 2005)
Addressed 9th-grade through 12th-grade *AVID* (*Advancement via Individual Determination*) class, on "Engineering our Future with Lessons from Nature"

187. Weaver Elementary School, Merced, CA (17 May 2005)
Addressed inaugural meeting of *WITS* (*Worldwide Investigations through Technology & Science*) after-school club for 4th-grade through 8th-grade students, on "Learning from Nature";
also, answered winning questions from the school's *Stump the Professor* competition

188. Waterford High School, Waterford, CA (20 May 2005)
Addressed 9th-grade through 12th-grade *AVID* (*Advancement via Individual Determination*) class, on "Engineering our Future with Lessons from Nature"

189. University of California at Merced, inaugural *New Student Orientation* event, Bakersfield, CA (9 July 2005)
Address to incoming students: "Survival at the Frontiers of Knowledge – and some tips for getting there"

190. ASM International Materials Camp℠, University of Washington, Seattle, WA (28-30 July 2005)
Featured address to high school juniors and seniors: "New Materials from the Zoo" (plus address to participants and parents, and presentation of diplomas, at the camp's Graduation Ceremony).

191. University of California at Merced, *UC Merced Foundation: Foundation Diplomats Lecture*, Merced, CA (14 Dec. 2005)
"Engineering our Future with Lessons from the Zoo"

192. Challenger Learning Center for Space Science Education, and Castle Science & Technology Center, Atwater, CA (17 Dec. 2005)
Frontiers of Science & Engineering Lecture Series
Address to general audience: "What Kind of Stuff can a Bioengineered Bug Build?"

193. Challenger Learning Center for Space Science Education, and Castle Science & Technology Center, Atwater, CA (18 Feb. 2006)
Frontiers of Science & Engineering Lecture Series
Address to general audience: "Isaac Newton: scientific, historical and social perspectives"

194-196. Weaver Elementary School, Merced, CA (5 May 2006)
Addressed three groups of 7th/8th-grade students at *Career Day 2006*, on "Engineering, a Bridge to the Future"

197. University of California at Merced, Merced, CA (17 May 2006)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced, on "Learning from Nature"

198. ASM International Materials Camp℠ for Teachers, California State University at Long Beach, CA (12 July 2006)
Featured address to high school teachers: "New Materials from the Zoo"

199. University of California at Merced, *New Student Orientation* event, Merced, CA (17 July 2006)
Address to incoming students: "Survival at the Frontiers of Knowledge – and some tips for getting there"

200. University of California at Merced, *New Student Orientation* event, Merced, CA (7 Aug. 2006)
Address to parents of incoming students: "Academics and Academic Expectations"

201. University of California at Merced, *Freshman 101: Recipe for Success* event, Merced, CA (26 Aug.2006)
Address to incoming freshman class: "Academics and Academic Expectations"

202. University of California at Merced, Merced, CA (7 Sept. 2006)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced, on "Learning from Nature"

203. University of California at Merced, Merced, CA (12 Oct. 2006)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced, on "Materials, Molecules and Magic"

204. University of California at Merced, Merced, CA (17 Nov. 2006)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced, on "Big Ideas about Very Small Things "

205. University of California at Merced, Merced, CA (7 Dec. 2006)
Addressed visiting group of 4th/5th-grade students from Alicia Reyes Elementary School, Merced, on "Stuff"

206. Challenger Learning Center for Space Science Education, and Castle Science & Technology Center, Atwater, CA (17 Feb. 2007)
Frontiers of Science & Engineering Lecture Series
Address to general audience: "Technology: Boon without Bane?"

207. University of California at Merced, *Experience UC Merced* event, Merced, CA (24 March 2007)
Address to admitted students and parents of admitted students: "Life at the Frontiers of Knowledge "

208. University of California at Merced, Merced County Office of Education, and San Joaquin County Office of Education, *Dinner with a Scientist*, Merced, CA (27 March 2007; this was the first ever DWAS hosted by a UC campus)
Keynote address to approx. 150 middle school students (grades 6-8) and teachers: "Life at the Frontiers of Knowledge"

209. Alicia Reyes Elementary School, Merced, CA (19 April 2007)
Family Science Night
Address to students and their parents: "Life at the Frontiers of Knowledge "
Multiple classroom demonstrations

210. University of California at Merced, *Experience UC Merced* event, Merced, CA (5 May 2007)
Address to admitted students and parents of admitted students: "Life at the Frontiers of Knowledge "

211. University of California at Merced, *New Student Orientation* event, Merced, CA (16 July 2007)
Address to parents of incoming students: "Academics and Academic Expectations"

212. University of California at Merced, *New Student Orientation* event, Merced, CA (20 July 2007)
Address to parents of incoming students: "Academics and Academic Expectations"

213. University of California at Merced, *New Student Orientation* event, Merced, CA (20 July 2007)
Address to incoming students: "Survival at the Frontiers of Knowledge – and some tips for getting there"

214-219. The Settlers High School, Bellville, South Africa (1 Aug. 2007)
Addressed six groups of students from Grades 10-12, on "New Materials from the Zoo"

220. University of California at Merced, *Freshman Assembly*, Merced, CA (25 Aug. 2007)
Address to incoming freshman class: "Academics and Academic Expectations"

221. University of California at Merced, *Resident Life Program*, Merced, CA (12 Sept. 2007)
Address to general university and civic audience: "Journey to the Heart of Africa: a Perspiring Professor Seeking Sweaty Hippos"

222. University of California at Merced, Merced, CA (13 Sept. 2007)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced, on "Journey to the Heart of Africa: a Perspiring Professor Seeking Sweaty Hippos"

223-227. McSwain Elementary School, Merced, CA (4 Oct. 2007)
Addressed five 7th/8th grade classes: "Journey to the Heart of Africa: a Perspiring Professor Seeking Sweaty Hippos"

228. University of California at Merced, Merced, CA (11 Oct. 2007)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced, on "Journey to the Heart of Africa: a Perspiring Professor Seeking Sweaty Hippos"

229. University of California at Merced, Merced, CA (15 Nov. 2007)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced, on "Journey to the Heart of Africa: a Perspiring Professor Seeking Sweaty Hippos"

230. Challenger Learning Center for Space Science Education, and Castle Science & Technology Center, Atwater, CA (16 Feb. 2008)
Frontiers of Science & Engineering Lecture Series
Address to general audience: "Journey to the Heart of Africa: a Perspiring Professor Seeking Sweaty Hippos"

231. University of California at Merced, Merced, CA (13 March 2008)
Addressed visiting group of 4th-grade students from Margaret Sheehy Elementary School, Merced, on "Stuff"

232. Challenger Learning Center for Space Science Education, and Castle Science & Technology Center, Atwater, CA (15 March 2008)
Frontiers of Science & Engineering Lecture Series
Address to general audience: "Materials Innovation in History and the Arts: Builders and Poker Players"

233. University of California at Merced, Merced, CA (10 April 2008)
Addressed visiting group of 4th-grade students from Margaret Sheehy Elementary School, Merced, on "Stuff"

234. University of California at Merced, Merced, CA (17 April 2008)
Keynote speaker for the *Spring Conference of the San Joaquin Valley Regional Association of California Counties*. Address to County Supervisors: "From Dreaming Spires to Perspiring Dreams"

235. University of California at Merced, *New Student Orientation* event, Merced, CA (11 July 2008)
Address to parents of incoming students: "Academics and Academic Expectations"

236. University of California at Merced, *New Student Orientation* event, Merced, CA (14 July 2008)
Address to parents of incoming students: "Academics and Academic Expectations"

237. University of California at Merced, *New Student Orientation* event, Merced, CA (14 July 2008)
Address to incoming students: "New Materials from the Zoo"

238. University of California at Merced, *New Student Orientation* event, Merced, CA (18 July 2008)
Address to parents of incoming students: "Academics and Academic Expectations"

239. University of California at Merced, *New Student Orientation* event, Merced, CA (25 July 2008)
Address to parents of incoming students: "Academics and Academic Expectations"

240. University of California at Merced, *New Student Orientation* event, Merced, CA (28 July 2008)
Address to parents of incoming students: "Academics and Academic Expectations"

241. University of California at Merced, *New Student Orientation* event, Merced, CA (1 Aug. 2008)
Address to parents of incoming students: "Academics and Academic Expectations"

242. University of California at Merced, *New Student Orientation* event, Merced, CA (4 Aug. 2008)
Address to parents of incoming students: "Academics and Academic Expectations"

243. University of California at Merced, *Freshman Assembly*, Merced, CA (25 Aug. 2008)
Address to incoming freshman class: "Academics and Academic Expectations"

244. University of California at Merced, Merced, CA (2 October 2008)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced: "Let's Talk About Hippos (from Dreaming Spires to Perspiring Dreams)"

245. Merced Multicultural Arts Center, Merced, CA (11 October 2008)
2nd Saturdays children's performance: "Hippos are Cool"

246. G.A.T.E. (Gifted and Talented Education) Program, Bellevue Elementary School, Atwater, CA (31 October 2008)
Addressed group of 3rd-grade through 8th-grade students: "Let's Talk About Hippos"

247. University of California at Merced, Merced, CA (6 November 2008)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced: "Let's Talk About Hippos"

248. University of California at Merced, Merced, CA (4 December 2008)
Addressed visiting group of 4th-grade students from Alicia Reyes Elementary School, Merced: "Let's Talk About Hippos"

249- Farmdale Elementary School, Merced, CA (3 February 2009)
251. Interactive presentations and demonstrations at the school's first *Family Science Night*.

Community Service

1. Physics Lab Event Supervisor and Judge, NorCal State Science Olympiad Competition, California State University, Stanislaus (1 April 2006)

2. Presentation Judge, 2008 State 4-H Field Day (State 4-H Presentation Day), University of California at Davis (31 May 2008)

3. Poster Judge (Engineering and Interdisciplinary), Sigma Xi Annual Meeting and Student Research Conference, Washington, DC (21 November 2008)

Christopher Viney

Service / Administration / Organizational Experience (selected)

External Activities

- Organizer or Co-organizer of 11 international symposia.
- Senior Editor of *International Journal of Biological Macromolecules* (March 1999 to June 2003, with responsibility for Europe, Asia, Africa, Australia; the journal's impact factor increased significantly during this time).
- Membership of 3 other editorial boards (2 current).
- Guest editor or co-editor of 4 special journal issues.
- Lead editor of 3 *Materials Research Society* proceedings volumes.
- Held various officer posts in Puget Sound Chapter of ASM International (details on pg 1.2 of resume; 5-star status awarded by ASM World Headquarters is the highest performance rating that a Chapter can receive).
- ASM International Nominating Committee (1994).
- NSF Review Panel member: Course, Curriculum, & Laboratory Improvement (CCLI) Program, Educational Materials Development (EMD) track (July 2004).
- ASM International Materials Education Foundation Board of Trustees (2005–2007).
- Originator and writer of monthly *"Good Thing You Asked"* column in *Merced Sun-Star* newspaper (Merced, CA), answering questions submitted by K-12 readers. The column addressed topics in science, engineering, technology and the natural world, emphasizing how ideas are connected across disciplines (Jan. 2005 to June 2007).
- Coordinator of – and multiple contributor to – UC Merced's participation in the Castle Air Museum / Castle Science & Technology Center Foundation lecture series celebrating *A Century of Powered Flight* (2004) and *Frontiers in Science and Engineering* (2005–present). Recipient of Air Force Association Chapter Award (Major General Charles I. Bennett, Jr. Chapter, Merced, CA), recognizing collaborative educational outreach activities (awarded October 2006). The Chapter earned the California AFA Distinguished Achievement Award for Aerospace Education in 2006.
- Member of EPSRC (Engineering and Physical Sciences Research Council; the UK's equivalent of NSF) Peer Review College on Structural Materials (Jan. 1997 to Dec. 2005).
- Founding member of Biomimetics Network for Industrial Sustainability (BIONIS); launched in UK with EPSRC seed funding in 2002; now international.
- Committee of the Polymer Physics Group, Institute of Physics, London (March 1999 to June 2003).
- Senior Management Group, Scottish Polymer Technology Network (Nov. 2000 to Dec. 2001).

University of California, Merced

University of California System-Wide Service

- Council of Undergraduate Deans / Vice Provosts
  - UC Merced representative (Jan. 2008 to present)
- University Committee on Academic Personnel (UCAP).
  - UC Merced representative (Sept. 2007 to Dec. 2007).

- University Committee on Planning and Budget (UCPB).
  - UC Merced representative (2 years; Sept. 2003 to Sept. 2005).
  - Multi-Campus Research Unit (MRU) review process subcommittee (2004).
  - MRU review subcommittee for California Sea Grant: leader (2004/5).
- Bioengineering Institute of California (BIC; this is an all-campus MRU).
  - UC Merced Associate Director (Sept. 2004 to June 2007).
  - Steering Committee: member (Feb. 2004 to June 2007).
- Board of Admissions and Relations with Schools (BOARS).
  - UC Merced alternate (Sept. 2003 to Sept. 2004).

<u>UC Merced Campus-Wide Service</u>

- Vice Provost for Undergraduate Education (Jan. 2008 to present).
- Proto-Divisional Council: member (Oct. 2004 to Sept. 2005).
- Committee on Academic Personnel (CAP): vice-chair (Sept. 2007 to Dec. 2007).
- Committee on Committees (COC): member (Sept. 2006 to Dec. 2007).
- Committee for Academic Planning and Resource Allocation (CAPRA): chair (2 years; Sept. 2003 to Sept. 2005).
- College One Executive Committee: member (July 2005 to Sept. 2007).
  - Co-chair (Sept. 2006 to Sept. 2007).
  - Member, Freshman Seminar Proposal Review Subcommittee (Sept. 2006 to Sept. 2007),
- Undergraduate Council: member (Sept. 2005 to Sept. 2006); *ex-officio* member (Jan. 2008 to present).
  - Chair, Subcommittee on Undergraduate Academic Programs and Policy (2005/2006).
  - Member, Subcommittee on Summer School Policies (2005/2006).
- Committee on Privilege and Tenure: member (Sept. 2005 to Sept. 2007).
- Campus Recharge Committee: member (Jan. 2004 to Sept. 2006).
- Campus Physical Planning Committee: member (Jan. 2004 to Sept. 2005).
- Campus Arts Committee: member (Jan. 2007 to present).
- Advisory Committee for Arts–UCM One Year Development Initiative: member (Jan. 2008 to present).
- Academic Strategic Planning Committee: member (Oct. 2007 to present).
  - Subcommittee on Undergraduate Education: member (Oct. 2007 to present).
- WASC Steering Committee (Sept. 2008 to Aug. 2011).
- Chancellor's Blue Ribbon Commission on Intercollegiate Athletics at the University of California, Merced: member (June 2008 to present)
- Survey Coordinating Committee: member (July 2008 to present).
- General Education CORE Course Planning / Development Committee: member (Aug. 2003 to June 2007).
  - Co-chair (Sept. 2004 to June 2007).
  - Alternate representative on College One Advisory Board (Sept. 2004 to July 2005).
- Chemistry Curriculum Innovation Workshop: co-organizer (18 June 2004).
- Integrated Calculus / Physics Course Development Workshop: co-organizer and co-chair (9-10 Sept. 2004).
- Ad Hoc Committee on WASC Assessment / On-going Program Review: member (Jan. 2005 to June 2006).
- Contingency Planning task force: member (Aug. 2004 to June 2005).
- Health Sciences / Medical Sciences / Medical Education Planning task group: member (July 2004 to January 2006).
- Systems Biology Institute pre-planning task force: member (July 2004 to Sept. 2004).
- Stem Cell Capital Facility (SCCF) Task Force: UC Merced Senate representative (Jan. 2005 to April 2005).
- Sierra Nevada Research Institute: founding member (June 2004 to September 2008).

- Founding member of three Graduate Groups:
  - Molecular Science and Engineering (now Physics and Chemistry) Graduate Group (Sept. 2003 to present).
  - Quantitative Systems Biology Graduate Group (QSB; Sept. 2003 to present).
  - Biological Engineering and Small-scale Technology Graduate Group (BEST; May 2006 to present). Member of Executive Committee (Aug. 2006 to present).
- Holiday Parade Committee: chair (Sept. 2003 to Dec. 2003).
- Bobcat Naming Committee: member (Sept. 2005).

School of Engineering Committees

- School of Engineering Faculty Chair (May 2005 to Sept. 2006).
- Executive Committee: member (Sept. 2006 to Dec. 2007).
- Committee on Committees: member (Sept. 2006 to Dec. 2007).
- Curriculum Committee: member (January 2006 to Sept. 2007).
  - Chair (Sept. 2006 to Sept. 2007).
- Bioengineering Major / Course Development Committee: chair (July 2004 to June 2006).
- Materials Science & Engineering Major / Course Development Committee: chair (April 2005 to Dec. 2007).
- Engineering Service Learning Committee: member (Aug. 2003 to present).

Faculty Search Committees

- Bioengineering Faculty Search Committees (x5; July 2004 to Dec. 2007).
  - Chair for 4 searches; three positions filled (Wei-Chun Chin, Michelle Khine, Kara McCloskey).
  - Member for one search; filled (Ariel Escobar).
- Materials Science & Engineering Faculty Search Committees (x3; Sept. 2005 to Dec. 2007).
  - Chair for one search (cross-school); not filled.
  - Member for 2 searches; one filled (Jennifer Lu).
- Organic Chemistry Faculty Search Committee: member (March 2004 to Aug. 2004); filled (Matthew Meyer).
- Materials Chemistry / Materials Physics Faculty Search Committee: member (Oct. 2006 to May 2007); not filled.

Employee Training Courses Completed

- Injury and Illness Prevention Program (27 Aug. 2003).
- Laboratory Safety Tutorial (9 Oct. 2003).
- American Red Cross First Aid Basics Certificate (Merced Tri-College Center, 6 Nov. 2003).
- American Red Cross Adult CPR Certificate (15 Jan. 2004).
- Preventing Sexual Harassment in the Workplace / Education Setting (24 February 2004).
- Online Ethics Briefing (9 Jan. 2007).
- Sexual Harassment Prevention for Faculty (12 Oct. 2007).
- Collaborative Institutional Training Initiative (CITI): Human Research Curriculum – Basic Biomedical Research course (24 May 2007).
- Collaborative Institutional Training Initiative (CITI): Human Research Curriculum – Basic Social / Behavioral Research (SBR) course (24 May 2007).
- Collaborative Institutional Training Initiative: Working with the IACUC – Basic course (26 May 2007).

Heriot-Watt University, Edinburgh

Gained versatile experience in the management of change. Undertook various administrative roles during extensive operational restructuring of the university in 2000-2002 (Departments were reorganized into Schools, establishing a new system where executive management of teaching, research, personnel, budgets and space are addressed co-operatively at the School level rather than the individual Departmental level). It was necessary to guide faculty and staff sensitively through a round of significant job losses.

Held formal appointment as Deputy Head of Department of Chemistry throughout the restructuring period, in practice assuming joint responsibility with the then Head of Department while the old and new management structures operated side-by-side. Appointed as first Head of Chemistry within the new structure, which included representing Chemistry on the Engineering and Physical Sciences School Management Group.

University (both old and new structures)

- Heriot-Watt University Senate: member (Dec. 1998 to July 2003).
- University Library Review Team : Appointed Member, (Oct. 2001 to July 2002).
- Heriot-Watt University Court: Elected Member (Aug. 2000 to July 2003).
- Heriot-Watt University Court Finance Committee: Elected Member (Aug. 2000 to July 2003).

The Heriot-Watt University Court is the governing body of the University. There are approximately 30 ex-officio, elected and co-opted members. It has custody and disposition of all the property of the University, and the control of its finances. It fulfills essentially the same functions as the Board of Regents at a public university in the USA.

Faculty of Science (old structure)

- Board of the Faculty of Science: member (Dec. 1998 to July 2002).

School of Engineering and Physical Sciences (new structure; School consists of Chemistry, Physics, Mechanical Engineering, Chemical Engineering, Electrical Engineering, Combined Studies)

- Member of 12-person School Management Group (Aug. 2002 to July 2003).
- Member of Teaching Co-ordination Group (Aug. 2002 to July 2003).

Chemistry (new structure; from Aug. 2002), and
Department of Chemistry (old structure; up to July 2002)

- Head of Chemistry (Aug. 2002 to July 2003)
- Deputy Head of Department (Aug. 1999 to July 2002). Included:
  - Performing any of Head of Department's functions
  - Undergraduate Liaison Committee: chair
  - Finance Committee: member
  - Research Workers Liaison Committee: member
  - Analytical Services Committee: member
  - Technical Staff Committee: member
- Head of Materials Section (Dec. 1998 to July 2003). Included:
  - Departmental Management Group: member
  - Research Committee: member
  - Academic Assessment/Audit Group: member
  - Honours Examinations Scrutiny Committee: member
  - MChem Committee: member

- Director of *Chemistry with a Year in North America* programmes (Feb. 1999 to July 2003).
- Academic Staff Committee: member (Dec. 1998 to July 2003).
- Department of Chemistry Refurbishment Task Force: member (June 1999 to July 2003).
- WWW Working Group: member (Feb. 1999 to July 2003).

Staff & Management Development Programmes Completed

- Training for Appraisers (30 Aug. 1999).
- Recruitment and Selection Training (30 Nov. 1999).
- Recruitment and Selection Law (22 March 2000).
- Roles and Responsibilities of the Head of Department (11 May 2000).
- Disability Awareness Training (16 May 2000).
- Financial Planning 1 – Resource Allocation Models (31 May 2000).
- Financial Planning 2 – Resource Allocation Models (8 June 2000).
- Human Resource Management – Dealing with Conflict (22 Jan. 2001).
- Discipline and Grievance (12 March 2001).
- Managing your Staff in a Period of Change (27 June 2001).
- Data Protection Act 1998 (28 May 2002).
- Management and Support Staff Program (28 Aug. 2002).

University of Oxford

St Catherine's College

- Senior Subject Tutor for Materials (Feb. 1995 to Dec. 1998). Included sole responsibility to organise, administer, evaluate and report on the tutorial teaching received by undergraduates studying Metallurgy & the Science of Materials (MSOM); shared responsibility for Materials, Economics & Management (MEM), and Engineering & Materials Science (EMS).
  Also responsible for selection / admission of MSOM students applying through St Catherine's.
- Governing Body: member (Feb. 1995 to Dec. 1998).
- Tutorial Committee: member (April 1995 to Dec. 1998).
- Finance Committee: member (Sept. 1995 to Aug. 1998). Authorised signatory on College bank account.
- Committee to define the relationship between the Academic Policy Committee, the Planning & Resources Committee, and the Dispensations Committee: member (1997).

Department of Materials

- Elector to the Cookson Professorship of Materials in the University of Oxford (1995).
- Departmental Open Day Co-Ordinator (Sept. 1995 to Dec. 1998).
  Each year this involved organizing:
  - Four one-day courses on "Materials at Oxford", each attended by approximately 50 high school pupils and their teachers.
  - Departmental activities on the two university-wide "Science Open Days".
  - Departmental activities during "Science, Engineering & Technology Week", promoted by the British Association for the Advancement of Science.
- Supplementary Subject Examiner (1996 and 1997).
- "Finals" Examiner (1998).
- Schools Liaison Officer (Sept. 1996 to Dec. 1998).
- Undergraduate Design Project Organiser (Sept. 1997 to Aug. 1998).
- Departmental Representative on Earth Sciences Subfaculty (Sept. 1997 to Aug. 1998).
- Harassment Advisor (Nov. 1997 to Dec. 1998).

Staff Development Programme

Voluntary attendance at appropriate courses offered by the University of Oxford to enhance the personal effectiveness of its faculty and advisors:

- Effective interviewer skills for undergraduate admissions (27 Sept. 1995).
- Methods of examining and assessing undergraduates (31 May 1996).
- Dealing with information overload (*Beat the Bumph*: reading effectively, managing volumes of paperwork, remembering information) (9 Jan. 1997; follow-up 11 Mar. 1997).
- Time management (4 Nov. 1997).
- Harassment Advisors' Training (13 Nov. 1997; 12 Feb. 1998).
- Pastoral Skills for Tutors (20 April 1998).

University of Washington

Center for Bioengineering

- Graduate Student Admissions Committee: member (Dec. 1990 to Jan. 1995).
- Institutional proposal to NSF (Academic Research Infrastructure Program) for purchase of Environmental Scanning Electron Microscope (March 1994). Co-ordinated input from 7 other faculty in Bioengineering and one in MS&E. The proposal was funded.

Department of Materials Science & Engineering

- Undergraduate Program Committee: member (Dec. 1987 to Dec. 1990).
- Graduate Student Recruiting Committee: member (Dec.1987 to Sept. 1988).
- Computer Committee: member (Sept. 1988 to Sept. 1990).
- Advisor to Student Chapter of ASM International (Sept. 1989 to Sept. 1990).

College of Engineering

- College Fellowships Committee, including Selection Subcommittee: member (March 1988 to Sept. 1989).
  Chaired Selection Subcommittee from Oct. 1988 to Sept. 1989.
- Computer Committee: member (Sept. 1988 to Sept. 1989).
- ECSEL Evaluation Committee: member (Jan. 1992 to Jan. 1995).

University of Cambridge

Co-organized the Darwin College Lecture Series for two years. Each series comprised eight high-profile interdisciplinary public lectures:

- *Origins* (1985 / 1986; inaugural series).
- *Man and the Environment* (1986 / 1987).

The Darwin College Lecture Series remains one of the premier public events in the Cambridge University academic calendar.