

CLAIRE WHITE - CV

DETAILS

Email whitece@princeton.edu
Website http://white.princeton.edu

CURRENT EMPLOYMENT

Position Assistant Professor (2013 – present)
Department of Civil and Environmental Engineering, and the
Andlinger Center for Energy & the Environment
Princeton University

Associated Faculty, Department of Chemical and Biological Engineering
Associated Faculty, Department of Mechanical and Aerospace
Engineering
Associated Faculty, Princeton Institute for the Science and Technology of
Materials
Associated Faculty, Princeton Institute for Computational Science and
Engineering

PREVIOUS EMPLOYMENT

Position Director's Postdoctoral Fellow (2011 – 2013)
Lujan Neutron Scattering Center / Physics and Chemistry of Materials,
joint position
Los Alamos National Laboratory

Postdoctoral Research Associate (2010 – 2011)
Lujan Neutron Scattering Center / Center for Nonlinear Studies, joint
position
Los Alamos National Laboratory

EDUCATIONAL BACKGROUND

2010 Ph.D. Department of Chemical & Biomolecular Engineering,
The University of Melbourne
Title *Atomic structure evolution in amorphous geopolymer precursors and gels*

2002 – 2006 BE (Civil) (Hons.), (GPA 90/100) The University of Melbourne
BSc (Physics), (GPA 93/100) The University of Melbourne

CLAIRE WHITE - CV

PEER REVIEWED JOURNAL PAPERS (MOST RECENT LISTED FIRST)

- (1) Yang S, Cai H, Chen B, Ko C, Özçelik VO, Ogletree DF, White CE, Shen Y, Tongay S, *Environmental stability of 2D anisotropic tellurium containing nanomaterials: anisotropic to isotropic transition*, Nanoscale, in press doi:10.1039/C7NR02397A
- (2) Nigay P-M, Nzihou A, White CE, Soboyejo WO, *Structure and properties of clay ceramics for thermal energy storage*, J. Am. Ceram. Soc., **2017** 100 4748-4759
- (3) Blyth A*, Eiben CA, Scherer GW, White CE, *Impact of activator chemistry on permeability of alkali-activated slags*, J. Am. Ceram. Soc., **2017** 100 4848-4859
*Undergraduate student
- (4) Garg N, White CE, *Mechanism of zinc oxide retardation in alkali-activated materials: an in situ X-ray pair distribution function investigation*, J. Mater. Chem. A, **2017** 5 11794-11804
Themed issue: Journal of Materials Chemistry A Emerging Investigators 2017
- (5) White CE, Olds DP, Hartl M, Hjelm RP, Page K. *Evolution of the pore structure during the early stages of the alkali-activation reaction: an in situ small-angle neutron scattering investigation*, J. Appl. Cryst. **2017** 50 (1) 61-75
- (6) Gu T, Jeong H, Yang K, Wu F, Yao N, Priestley RD, White CE, Arnold CB, *Anisotropic crystallization in solution processed chalcogenide thin film by linearly polarized laser*, Appl. Phys. Lett., **2017** 110 041904
- (7) Özçelik VO, White CE, *Nanoscale charge-balancing mechanism in alkali-substituted calcium-silicate-hydrate gels*, J. Phys. Chem. Lett., **2016** 7 (24) 5266-5272
- (8) Yang K, White CE, *Modeling the formation of alkali aluminosilicate gels at the mesoscale using coarse-grained Monte Carlo*, Langmuir, **2016** 32 (44) 11580-11590
- (9) Gong K, White CE, *Impact of chemical variability of ground granulated blast-furnace slag on the phase formation in alkali-activated slag*, Cem. Concr. Res., **2016** 89 310-319
- (10) Stan CV, Dutta R, White CE, Prakapenka V, Duffy TS, *High-pressure polymorphism of PbF₂ to 75 GPa*, Phys. Rev. B, **2016** 94 024104
- (11) Natali ME, White CE, Bignozzi MC, *Elucidating the atomic structures of difference sources of fly ash using X-ray and neutron PDF analysis*, Fuel, **2016** 177 148-156
- (12) White CE, *Effects of temperature on the atomic structure of synthetic calcium-silicate-deuterate gels: A neutron pair distribution function investigation*, Cem. Concr. Res., **2016** 79 93-100
- (13) Morandau AE, Fitts JP, Lee HD, Shubeita SM, Feldman LC, Gustafsson T, White CE, *Nanoscale heterogeneities in a fractured alkali-activated slag binder: A helium ion microscopy analysis*, Cem. Concr. Res., **2016** 79 45-48
- (14) Morandau AE, White CE, *The role of magnesium-stabilized amorphous calcium carbonate in mitigating the extent of carbonation in alkali-activated slag*, Chem. Mater., **2015** 27 (19) 6625-6634
- (15) Morandau AE, White CE, *In situ X-ray pair distribution function analysis of accelerated carbonation of a synthetic calcium-silicate-hydrate gel*, J. Mater. Chem. A, **2015** 3 8597-8605

CLAIRE WHITE - CV

- (16) White CE, Daemen LL, Hartl M, Page K, *Intrinsic differences in atomic ordering of calcium (alumino)silicate hydrates in conventional and alkali-activated cements*, Cem. Concr. Res., **2015** 67 66-73
- (17) White CE, Henson NJ, Daemen, LL, Hartl M, Page K, *Uncovering the true atomic structure of disordered materials: The structure of a hydrated amorphous magnesium carbonate ($MgCO_3 \cdot 3D_2O$)*, Chem. Mater., **2014** 26 (8) 2693-2702
- (18) White CE, Kearley GJ, Provis JL, Riley DP, *Inelastic neutron scattering analysis of the thermal decomposition of kaolinite to metakaolin*, Chem. Phys., **2013** 427 82-86
*Special issue: *Advances and frontiers in chemical spectroscopy with neutrons*
- (19) White CE, Kearley GJ, Provis JL, Riley DP, *Structure of kaolinite and influence of stacking faults: Reconciling theory and experiment using inelastic neutron scattering analysis*, J. Chem Phys., **2013** 138 (19) 194501
- (20) White CE, Page K, Henson NJ, Provis JL, *In situ X-ray pair distribution function analysis of geopolymer gel nanostructure formation kinetics*, Phys. Chem. Chem. Phys., **2013** 15 (22) 8573-8582
- (21) White CE, Page K, Henson NJ, Provis JL, *In situ synchrotron X-ray pair distribution function analysis of the early stages of gel formation in metakaolin-based geopolymers*, Appl. Clay Sci., **2013** 73 (SI) 17-25
- (22) Provis JL, Hajimohammadi A, White CE, Bernal SA, Myers RJ, Winarski RP, Rose V, Proffen T, Llobet A, van Deventer JSJ, *Nanostructural characterization of geopolymers by advanced beamline techniques*, Cem. Concr. Compos., **2013** 36 (1) 56-64
- (23) White CE, Provis JL, Proffen T, van Deventer JSJ, *Molecular mechanisms responsible for the structural changes occurring during geopolymerization: Multiscale simulation*, AIChE J. **2012** 58 (7) 2241-2253
- (24) Provis JL, Myers RJ, White CE, Rose V, van Deventer JSJ, *X-ray microtomography shows pore structure and tortuosity in alkali-activated binders*, Cem. Concr. Res., **2012** 42 (6) 855-864
- (25) White CE, *Pair distribution function analysis of amorphous geopolymer precursors and binders: the importance of complementary simulations*, Z. Kristallogr., **2012** 227 (5) 304-312
- (26) White CE, Provis JL, Llobet A, Proffen T, van Deventer JSJ, *Evolution of local structure in geopolymer gels: an in situ neutron pair distribution function analysis*, J Am. Ceram. Soc., **2011** 94 (10) 3532-3539
- (27) Page K, White CE, Estell EG, Neder RB, Llobet A, Proffen T, *Treatment of hydrogen background in bulk and nanocrystalline neutron total scattering experiments*, J Appl. Crystallogr., **2011** 44 532-539
- (28) White CE, Provis JL, Proffen T, van Deventer JSJ, *Quantitative mechanistic modeling of silica solubility and precipitation during the initial stages of zeolite synthesis*, J Phys. Chem. C, **2011** 115 (20) 9879-9888
- (29) White CE, Provis JL, Kearley GJ, Riley DP, van Deventer JSJ, *Density functional modelling of silicate and aluminosilicate dimerisation solution chemistry* Dalton Trans., **2011** 40 (6) 1348-1355

CLAIRE WHITE - CV

- (30) White CE, Provis JL, Gordon LE, Riley DP, van Deventer JSJ, *Effect of temperature on the local structure of kaolinite intercalated with potassium acetate*, Chem. Mater., **2011**, 23 (2) 188-199
- (31) White CE, Provis JL, Proffen T, van Deventer JSJ, *The effects of temperature on the local structure of metakaolin-based geopolymer binder: a neutron pair distribution function investigation*, J Am. Ceram. Soc., **2010**, 93 (10) 3486-3492
- (32) Wurden C, Page K, Llobet A, White CE, Proffen T, *Extracting differential pair distribution functions using MIXSCAT*, J. Appl. Cryst., **2010**, 43, 635-638
- (33) White CE, Provis JL, Proffen T, Riley DP, van Deventer JSJ, *Density functional modeling of the local structure of kaolinite subjected to thermal dehydroxylation*, J. Phys. Chem. A, **2010**, 114 (14) 4988-4996
- (34) White CE, Provis JL, Proffen T, Riley DP, van Deventer JSJ, *Combining density functional theory (DFT) and pair distribution function (PDF) analysis to solve the structure of metastable materials: The case of metakaolin.*, Phys. Chem. Chem. Phys., **2010**, 12 (13) 3239-3245
- (35) White CE, Provis JL, Riley DP, Kearley GJ, van Deventer JSJ, *What is the structure of kaolinite: Reconciling theory and experiment*, J. Phys. Chem. B, **2009**, 113 (19) 6756-6765
- (36) Provis JL, Gehman JD, White CE, Vlachos DG, *Modeling silica nanoparticle dissolution in TPAOH-TEOS-H₂O solutions*, J. Phys. Chem. C, **2008**, 112 (38) 14769-14775

COMMENTS PUBLISHED ON PEER REVIEWED JOURNAL PAPERS

- (1) White CE, Provis JL, *Comment on "Structure-directing role of counterions in the initial stage of zeolite synthesis"*, J Phys. Chem. C, **2012** 116 (1) 1619-1621
- (2) White CE, Perander LM, Provis JL, van Deventer JSJ, *The use of XANES to clarify issues related to bonding environments in metakaolin: a discussion of the paper S. Sperinck et al., "Dehydroxylation of kaolinite to metakaolin-a molecular dynamics study," J. Mater Chem., 2011, 21, 2118-2125* J Mater. Chem., **2011**, 21 (19) 7007-7010
- (3) Provis JL, White CE, van Deventer JSJ, *Discussion of Y. Zhang et al., "Study of ion cluster reorientation process of geopolymerization reaction using semi-empirical AMI calculations," Cem Concr Res 39(12): 1174-1179; 2009.* Cem. Concr. Res., **2010**, 40 (5) 827-828

PLENARY CONFERENCE PRESENTATIONS

- (1) White CE, *Recent progress in elucidating accurate structural representations of disordered complex materials*, American Conference on Neutron Scattering 2012, Washington DC, USA, 24-28 June 2012

CLAIRE WHITE - CV

KEYNOTE CONFERENCE PRESENTATIONS

- (1) White CE, *Elucidating the kinetics and thermodynamics of alkali-activated materials using high-energy X-ray and neutron scattering*, 6th Advances in Cement-Based Materials, Manhattan, Kansas, USA, 20-22 July 2015
- (2) White CE, *Exploring amorphous aluminosilicates at the nanoscale*, Goldschmidt 2014, Sacramento, USA, 8-13 June 2014

INVITED CONFERENCE PRESENTATIONS

- (1) White CE, *Uncovering the atomic structure and mesoscale morphology of amorphous materials by combining multiscale simulations and neutron scattering*, Gordon Research Conference: Neutron Scattering, Hong Kong, China, 6-11 August 2017
- (2) White CE, Özçelik VO, Garg N, *Manipulating the layered phases in low-CO₂ cements and related minerals*, 253rd American Chemical Society National Meeting & Exposition, San Francisco, California, USA, 2-6 April 2017
- (3) White CE, *Permeability and nanoscale gel stability of alkali-activated materials*, Gordon Research Conference: Advanced Materials for Sustainable Infrastructure Development, Hong Kong, China, 31 July - 5 August 2016
- (4) White CE, *Investigating permeability and carbonation behavior of sustainable cements*, American Geophysical Union Fall Meeting, San Francisco, USA, 14-18 December 2015
- (5) White CE, Henson NJ, Daemen LL, Hartl M, Page K, *Uncovering the local atomic structure of a hydrated amorphous magnesium carbonate: The computational chemistry and total scattering iterative methodology*, 249th ACS National Meeting & Exposition, Denver, Colorado, USA, 22-26 March 2015
- (6) White CE, *Exploring the potential energy surface of hydrated-amorphous magnesium carbonate: The computational chemistry and total scattering iterative methodology*, American Crystallographic Association Annual Meeting, Albuquerque, New Mexico, USA, 24-28 May 2014
- (7) White CE, *Amorphous materials: Potential avenues for uncovering their atomic structures*, TMS 2013 Annual Meeting and Exhibition, San Antonio, Texas, USA, 3-7 March 2013
- (8) White CE, Provis JL, Proffen T, Riley DP, van Deventer JSJ, *Coupling total scattering and density functional theory computations to solve the structure of complex disordered aluminosilicates*, American Crystallographic Association 2010 Annual Meeting, Chicago, Illinois, USA, 24-29 June 2010
- (9) van Deventer JSJ, White CE, Provis JL, *The role of molecular research into the commercialization of geopolymer concrete in Australia*, 12th International Ceramics Congress of Cimtec 2010, Montecatini Terme, Italy, 6-11 June 2010

CLAIRE WHITE - CV

CONFERENCE PRESENTATIONS (ORAL UNLESS NOTED)

- (1) Gong K, Özçelik VO, White CE, *Modeling the local structure of ground granulated blast-furnace slag by combining multiple computational tools*, 8th Advances in Cement-Based Materials, Atlanta, Georgia, USA, 26-28 June 2017 (Poster)
*Won a best poster award
- (2) Gong K, White CE, *Mechanisms of sulfate attack in alkali-activated slag*, 8th Advances in Cement-Based Materials, Atlanta, Georgia, USA, 26-28 June 2017
- (3) McCaslin E, White CE, *Characterization of amorphous calcium carbonate and pore solution during accelerated carbonation of alkali-activated slag*, 8th Advances in Cement-Based Materials, Atlanta, Georgia, USA, 26-28 June 2017
- (4) Gong K, White CE, *Modeling the atomic structure of calcium aluminosilicate glasses using an iterative simulation-experiment methodology*, 12th Pacific Rim Conference on Ceramic and Glass Technology, including Glass & Optical Materials Division Meeting, Waikoloa, Hawaii, USA, 21-26 May 2017
- (5) Yang K, White CE, *Modeling the formation of sodium and calcium aluminosilicate gels at the mesoscale using coarse-grained Monte Carlo*, 12th Pacific Rim Conference on Ceramic and Glass Technology, including Glass & Optical Materials Division Meeting, Waikoloa, Hawaii, USA, 21-26 May 2017 (Poster)
- (6) McCaslin E, White CE, *Role of magnesium and amorphous calcium carbonate in reducing the extent of carbonation degradation in silicate-activated slag pastes*, 12th Pacific Rim Conference on Ceramic and Glass Technology, including Glass & Optical Materials Division Meeting, Waikoloa, Hawaii, USA, 21-26 May 2017
- (7) Garg N, White CE, *Impact of alkalis on the atomic structure of calcium aluminosilicate gels: An x-ray pair distribution function investigation*, 253rd American Chemical Society National Meeting & Exposition, San Francisco, California, USA, 2-6 April 2017
- (8) Yang K, White CE, *Modeling the formation of sodium and calcium aluminosilicate gels at the mesoscale using coarse-grained Monte Carlo*, 253rd American Chemical Society National Meeting & Exposition, San Francisco, California, USA, 2-6 April 2017
- (9) Özçelik VO, White CE, *Nanoscale charge balancing mechanism in alkali substituted C-S-H gels from first-principles calculations*, 253rd American Chemical Society National Meeting & Exposition, San Francisco, California, USA, 2-6 April 2017
- (10) Özçelik VO, White CE, *Nanoscale charge balancing mechanism in calcium-silicate-hydrate gels: Novel complex disordered materials from first-principles*, APS March Meeting 2017, New Orleans, Louisiana, USA, 13-17 March 2017
- (11) Gong K, Özçelik VO, White CE, *Modeling the local structure of amorphous materials: A density functional theory investigation*, APS March Meeting 2017, New Orleans, Louisiana, USA, 13-17 March 2017 (Poster)
- (12) Dutta R, Stan CV, White CE, Duffy TS, *Theoretical study of the high-pressure isosymmetric phase transition in lead fluoride, PbF₂*, American Geophysical Union Fall Meeting, San Francisco, USA, 12-16 December 2016 (Poster)

CLAIRE WHITE - CV

- (13) Blyth AC, Özçelik VO, Eiben CA, Scherer GW, White CE, *Permeability and gel stability of alkali-activated materials*, American Concrete Institute Convention, Philadelphia, Pennsylvania, USA, 23-27 October 2016
- (14) Garg N, White CE, *Impact of nanoparticles on the atomic ordering of C-S-H and C-(N)-A-S-H gels: New insights from synchrotron X-rays*, Gordon Research Conference: Advanced Materials for Sustainable Infrastructure Development, Hong Kong, China, 31 July - 5 August 2016 (Poster)
- (15) McCaslin E, White CE, *Development of carbonation resistant low-CO₂ cements*, Gordon Research Conference: Advanced Materials for Sustainable Infrastructure Development, Hong Kong, China, 31 July - 5 August 2016 (Poster)
- (16) White CE, Olds DP, Hartl MA, Hjelm RP, Page K, *Quantifying the pore structure evolution in sustainable cements using in situ small-angle neutron scattering analysis*, American Conference on Neutron Scattering, Long Beach, California, USA, 10-14 July 2016
- (17) Garg N, White CE, *Impact of nanoparticles on the atomic ordering of C-S-H and C-(N)-A-S-H gels: New insights from synchrotron X-rays*, 7th Advances in Cement-Based Materials, Evanston, Illinois, USA, 10-13 July 2016
- (18) Blyth A, Eiben CA, Scherer GW, White CE, *Impact of curing time and activator chemistry on the intrinsic permeability of alkali-activated pastes*, 6th International Conference on Engineering for Waste and Biomass Valorization, Albi, France, 23-26 May 2016
- (19) Yang K, White CE, *Does gel stability play a role in dictating the extent of microcracking in alkali-activated slag paste?*, 6th International Conference on Engineering for Waste and Biomass Valorization, Albi, France, 23-26 May 2016 (Poster)
*Won a best poster prize
- (20) Gong K, White CE, *Modeling the local structure of ground granulated blast-furnace slags: A density functional theory investigation*, 6th International Conference on Engineering for Waste and Biomass Valorization, Albi, France, 23-26 May 2016
- (21) Nigay P-M, White CE, Soboyejo W, Nzihou A, *Effect of organics addition in a clay ceramic for the storage of thermal energy*, 6th International Conference on Engineering for Waste and Biomass Valorization, Albi, France, 23-26 May 2016
- (22) Ducouso M, Lyczko N, White CE, Morandau A, Nzihou A, *Local atomic structure of biochars: An X-ray pair distribution function investigation*, 6th International Conference on Engineering for Waste and Biomass Valorization, Albi, France, 23-26 May 2016 (Poster)
- (23) Özçelik VO, White CE, *Nanoscale properties and stability simulations of alkali activated cement pastes from first principle calculations*, APS March Meeting 2016, Baltimore, Maryland, USA, 14-18 March 2016 (Poster)
- (24) White CE, *Elucidating the atomic structure of synthetic calcium-silicate-hydrate gels using neutron pair distribution function analysis*, Concrete 2015, Melbourne, Victoria, Australia, 30 August – 2 September 2015
- (25) Yang K, White CE, *A mesoscale investigation of the alkali-activation reaction using coarse-grained Monte Carlo simulations*, 6th Advances in Cement-Based Materials, Manhattan, Kansas, USA, 20-22 July 2015

CLAIRE WHITE - CV

- (26) Gong K, White CE, *Impact of the mineralogy and local atomic structure of neat slags on the phase formation in alkali-activated slag pastes*, 6th Advances in Cement-Based Materials, Manhattan, Kansas, USA, 20-22 July 2015 (Poster)
*Won a best poster prize
- (27) Blyth A, Eiben CA, Scherer GW, White CE, *Impact of curing time and activator chemistry on the intrinsic permeability of alkali-activated pastes*, 6th Advances in Cement-Based Materials, Manhattan, Kansas, USA, 20-22 July 2015 (Poster)
- (28) Morandea AE, White CE, *Carbonation of calcium-silicate-hydrate gel: Elucidation of atomic structure mechanisms and reaction kinetics using pair distribution function analysis*, Fifth International Conference on Accelerated Carbonation for Environmental and Material Engineering, New York City, New York, US, 21-24 June 2015
- (29) White CE, Daemen LL, Hartl M, Page K, *Nanoscale ordering in conventional and alternative cementitious materials*, Engineering Mechanics Institute Conference, Stanford, California, USA, 16-19 June 2015
- (30) Morandea A, Fitts JP, Myneni S, White CE, *Controlling microcracking in low embodied energy concrete*, Princeton E-affiliates Partnership Third Annual Meeting, Princeton, New Jersey, USA, 14 November 2014
- (31) Morandea A, Thiéry M, Dangla P, White CE, *Accelerated carbonation modelling of fly as blended cement paste*, RILEM International Symposium on Concrete Modelling, Beijing, China, 12-14 October 2014
- (32) Eiben C, Scherer GW, White CE, *Elucidating the intrinsic permeability of alkali-activated slag cement using the beam-bending method*, 5th Advances in Cement-based Materials: Characterization, Processing, Modeling and Sensing, Cookeville, Tennessee, USA, 9-11 July 2014
- (33) White CE, Provis JL, Riley DP, Proffen Th, Perander LM, van Deventer JSJ, *Characterisation and description of the structure of metakaolin by total scattering, density functional theory, and X-ray spectroscopy*, Concrete Repair, Rehabilitation and Retrofitting III - Proceedings of the 3rd International Conference on Concrete Repair, Rehabilitation and Retrofitting, ICCRRR 2012, **2012** 1426-1432 (Cape Town, South Africa, 3-5 September 2012)
- (34) Provis JL, Hajimohammadi A, White CE, Bernal SA, Myers RJ, Winarski RP, Rose V, Proffen T, Llobet A, van Deventer JSJ, *Nanostructural characterization of geopolymers by advanced beamline techniques*, 4th International Symposium on Nanotechnology in Construction, Agios Nikolaos, Crete, Greece, 20-22 May 2012
- (35) White CE, Bloomer B, Provis JL, Henson NJ, Page K, *The synergy between total scattering and advanced simulation techniques: Quantifying geopolymer gel evolution*, 4th International Symposium on Nanotechnology in Construction, Agios Nikolaos, Crete, Greece, 20-22 May 2012
- (36) White CE, *The PDF-DFT synergy for metastable materials: How to obtain structural representations that are energetically favorable*, American Crystallographic Association meeting 2011, New Orleans, Louisiana, USA, 28 May - 2 June 2011

CLAIRE WHITE - CV

- (37) White CE, *The role of total scattering and multiscale modeling in the technological development of geopolymer concrete*, American Crystallographic Association meeting 2011, New Orleans, Louisiana, USA, 28 May - 2 June 2011
- (38) White CE, Provis JL, Henson NJ, Page K, Proffen T, van Deventer JSJ, *Multiscale modeling of the structural mechanisms occurring during the formation of geopolymer binders: combining density functional theory and Monte Carlo analysis*, American Crystallographic Association meeting 2011, New Orleans, Louisiana, USA, 28 May - 2 June 2011 (Poster)
- (39) White CE, Provis JL, Proffen T, Riley DP, van Deventer JSJ, *Solving the structure of amorphous aluminosilicates: understanding the chemistry of low-CO₂ geopolymer concrete*, LANSCE User Group Meeting, Santa Fe, New Mexico, USA, Sept 30 - Oct 1 2009 (Poster)
- (40) White CE, Provis JL, Riley DP, Proffen T, van Deventer JSJ, *Towards total structure solutions of disordered layered aluminosilicates*, International Conference on Neutron Scattering 2009, Knoxville, Tennessee, USA, 3-7 May 2009.
- (41) White CE, Provis JL, Riley DP, Proffen T, van Deventer JSJ, *Structure of metakaolin from neutron pair distribution function analysis*, 7th AINSE/ANBUG Neutron Science Symposium 2008, Lucas Heights, NSW, Australia, 8-10 Dec 2008.
- (42) White CE, Provis JL, Riley DP, Proffen T, van Deventer JSJ, *Towards the total structure solution of metakaolin*, Materials Science & Technology Conference 2008, Pittsburgh, Pennsylvania, USA, 4-9 Oct 2008
- (43) Duxson P, Gehman JD, White CE, Provis JL, Separovic F, Gan Z, van Deventer JSJ, *¹⁷O MQMAS NMR characterization of geopolymers*, Chemeca 2007, Melbourne, Victoria, Australia, 24-26 Sept 2007

OTHER REPORTS/PRESENTATIONS

- (1) White CE, *Uncovering the chemical mechanisms controlling formation, stability and long term degradation of sustainable cements*, invited seminar at the Missouri University of Science and Technology, Rolla, Missouri, USA, 7 September 2017
- (2) White CE, *Designing sustainable cementitious materials for a sustainable future*, invited seminar at the University of Hong Kong, Hong Kong, China, 11 August 2017
- (3) White CE, *Designing sustainable cementitious materials for a sustainable future*, invited seminar at City University of Hong Kong, Hong Kong, China, 4 August 2017
- (4) White CE, *CAREER: SusChEM: Controlling carbonation degradation in sustainable cements by stabilizing amorphous calcium carbonate*, speaker at the 2017 NSF Career Development Workshop in Ceramics, Waikoloa, Hawaii, USA, 20-21 May 2017
- (5) White CE, *Uncovering the chemical mechanisms controlling formation, stability and long term degradation of sustainable cements*, invited seminar at the University of Minnesota, Minneapolis, Minnesota, USA, 25 April 2017

CLAIRE WHITE - CV

- (6) White CE, *Nanoengineering low-CO₂ concrete using synchrotron and neutron techniques combined with multiscale simulations*, invited talk at the Princeton American Chemical Society Meeting, Princeton, New Jersey, USA, 17 November 2016
- (7) White CE, *Investigating the permeability and carbonation behavior of alkali-activated materials*, seminar at EPFL, Lausanne, Switzerland, 30 June 2016
- (8) White CE, *Investigating permeability and carbonation behavior of sustainable cements*, seminar at EMPA, Dübendorf, Switzerland, 29 June 2016
- (9) White CE, *Alkali-activated materials*, invited seminar at Owens Corning, Chambéry, France, 27 June 2016
- (10) White CE, *Designing sustainable cementitious materials for a sustainable future*, presenter at the Andlinger Center for Energy and the Environment Building Opening Celebration and Symposium, Princeton, USA, 20 May 2016
- (11) White CE, *Kinetics and thermodynamics of alkali-activated materials and related amorphous carbonate phases using high-energy X-ray and neutron scattering and density functional modeling*, invited seminar at MIT, Cambridge, USA, 2 November 2015
- (12) White CE, *Engineering low-CO₂ cements and related materials*, invited seminar at l'École des Mines d'Albi-Carmaux, Albi, France, 25 August 2015
- (13) White CE, *Nanoengineering low-CO₂ concrete using synchrotron and neutron techniques combined with multiscale simulations*, invited seminar at University of Rochester, Rochester, USA, 10 April 2015
- (14) White CE, *Nanoengineering low-CO₂ concrete using synchrotron and neutron techniques combined with multiscale simulations*, invited seminar at Worcester Polytechnic Institute, Worcester, USA, 9 April 2015
- (15) White CE, *Short-range correlations using PDF*, lecturer at the 11th LANSCE School on Neutron Scattering, Los Alamos, USA, 18-27 February 2015
- (16) White CE, *Engineering sustainable cements at the (atomic and) mesoscale*, invited PRISM seminar at Princeton University, Princeton, USA, 7 May 2014
- (17) White CE, *Nanoengineering of macroscale materials*, invited seminar at UT Knoxville, Tennessee, USA, May 2013
- (18) White CE, *Probing the local structural evolution of zeolites and cementitious materials using neutron total scattering and multiscale simulations*, invited seminar at the Bragg Institute, Australian Nuclear Science and Technology Organisation, New South Wales, Australia, August 2011
- (19) White CE, *The synergy between total scattering and advanced simulation techniques in understanding complex, disordered and nanostructured materials*, invited seminar at The University of Melbourne, Victoria, Australia, August 2011
- (20) White CE, *The role of molecular research in tailoring geopolymer durability*, invited seminar at the Spallation Neutron Source, Oak Ridge National Laboratory, Tennessee, USA, July 2011
- (21) White CE, *The role of molecular research in tailoring geopolymer durability*, postdoc talk at the Center for Nonlinear Studies, Los Alamos National Laboratory, New Mexico, USA, April 2011

CLAIRE WHITE - CV

- (22) White CE, Provis JL, Proffen T, Riley DP, van Deventer JSJ, *The PDF-DFT synergy for metastable materials: How to obtain structural representations that are energetically favorable*, invited lecture at *Applications of neutron scattering to materials and earth sciences* workshop, University of California, Berkeley, 11 December 2010.
- (23) White CE, Provis JL, Proffen T, Riley DP, van Deventer JSJ, *Towards total structure solutions of disordered layered aluminosilicates*, invited talk at the Lujan Neutron Scattering Center, Los Alamos National Laboratory, 23 June 2009.
- (24) White CE, Provis JL, Proffen T, Riley DP, van Deventer JSJ, *Towards total structure solutions of disordered layered aluminosilicates*, invited talk at the University of California, Berkeley, 15 May 2009.
- (25) White CE, Provis JL, Riley DP, Proffen T, van Deventer JSJ, *Towards the total structure solution of metakaolin*, invited talk at CNLS Los Alamos National Laboratory, 22 April 2009.

REVIEWER FOR ACADEMIC JOURNALS

American Mineralogist, Langmuir, Journal of Physical Chemistry A/B/C/Letters, Journal of the American Ceramic Society, Cement and Concrete Research, Cement and Concrete Composites, Waste and Biomass Valorization, Applied Clay Science, Zeitschrift für Kristallographie, AIChE Journal, Journal of Materials Science, Crystal Growth & Design, Construction and Building Materials, Journal of Applied Crystallography, Materials and Structures, Journal of Sustainable Cement-Based Materials, Inorganic Chemistry

PROFESSIONAL MEMBERSHIPS

- Member of RILEM (member of the Technical Committees “247-DTA” and “238-SCM”)
- Voting member of ASTM International
- Member of the American Ceramic Society

PROFESSIONAL/COMMUNITY SERVICE

University Service

- Acting program advisor: Architecture and Engineering Program Track, Department of Civil and Environmental Engineering (Fall 2017)
- Organizer of the K-12 outreach program for the Andlinger Center for Energy and the Environment
- K-12 outreach activities:
 - Host high school students in research group during summer (2014, 2015, 2016)
 - Supervise high school research student in research group during academic year (2015/2016)
 - Invited speaker and judge at the Princeton Energy Case Competition, Princeton University Energy Association, 3rd Dec 2016

CLAIRE WHITE - CV

- Invited speaker at the Head Mistresses Association of the East Fall Conference, 14th Nov 2016, The Henry Chauncey Conference Center
- Invited speaker at the High School Colloquium, Society of Women Engineers, Princeton University, 19 April 2015
- Invited speaker at the Montgomery High School, 4 February 2015
- Panelist at the 2014 Girl Scout STEM Fair, Princeton Plasma Physics Laboratory, 17 May 2014
- Invited speaker at the Eco Social Initiative, 1 November 2014 (organization consisting of high school students from NJ)
- Booth at Princeton University's Materials Science NanoDay, 2014, 2015, 2016
- Committee member of the Committee on the Course of Study (2015 - present)
- Faculty advisor for Graduate Women in Science and Engineering (GWiSE), Princeton University (2015-present)
- Faculty advisor for the Society of Women Engineers (SWE), Princeton University (2016 - present)
- Faculty advisor of REU students, via PRISM (2014 - present)
- Dinner talk for SWE, 8th November 2016
- Dinner talk at the Princeton Energy Table, 22nd September 2016
- Member, SEAS Self-Study Committee: Facilities & Resources (2014/2015)
- Member, Andlinger-PRISM Equipment Committee (2013 - 2015)
- Member, Program in Sustainable Energy
- Freshmen Advising (2014/2015 - present)
- Faculty organizer of the ACEE Highlight Seminar Series 2015/2016
- Invited speaker for the NSF-REU program, "*I can't believe it's not concrete: Investigating sustainable construction materials using synchrotron and neutron techniques*", Princeton, 2014, 2016

Outside University

- "Hot Topics in Physics" speaker at the APS Conference for Undergraduate Women in Physics, January 2016.
- Session organizer for the American Chemical Society conference, 2017.
- Session organizer for the American Conference on Neutron Scattering, 2016.
- Session organizer for the 6th International Conference on Engineering for Waste and Biomass Valorization, 2016.
- Chair of the SNS-HFIR User Group, Oak Ridge National Laboratory, 2015-2016.
- Vice-chair of the SNS-HFIR User Group, Oak Ridge National Laboratory, 2013-2015.
- National Science Foundation review panelist 2014, 2017
- CASIS ad-hoc reviewer 2015
- German Research Foundation (DFG) review panelist 2016
- PhD thesis examiner 2015, 2016

CLAIRE WHITE - CV

- Principal organizer of the “Advanced Simulation Techniques for Total Scattering Data” workshop, Santa Fe, 16-19 October 2012
- Lecturer at the New Mexico Supercomputing Challenge for high school students, Los Alamos National Laboratory, USA, 22-23 April 2012
- Lecturer at the 2011 LANSCE Neutron Scattering School, Los Alamos National Laboratory, USA, 18 July 2011
- Participated in Careers Fair for elementary students, organized by the American Association of University Women, Santa Fe, USA, May 2011
- Lecturer at the *Applications of neutron scattering to materials and earth sciences* workshop, UC Berkeley, USA, 11 December 2010
- Organized the first Australian workshop on “Total Scattering Analysis of Complex Materials Workshop”, The University of Melbourne, Australia, 12-13 August 2010.

TEACHING EXPERIENCE

- CEE 364/ARC364: *Materials in Civil Engineering*, Spring 2014, 2015, 2016, 2017
- ENE 506: *Synchrotron and Neutron Studies of Materials*, Fall 2014, 2015, 2017
- ENE 267/MSE287: *Materials for Energy Technologies and Efficiency*, Fall 2016

GRANTS, SCHOLARSHIPS AND PRIZES

Howard B. Wentz Jr. Junior Faculty Award (Princeton University, 2017)

- Award recognizes and assists promising junior faculty members in the School of Engineering and Applied Science at Princeton University.

CAREER Award (National Science Foundation, 2016)

Discovery Early Career Research Award (Australian Research Council)

- Announced as a recipient of the DECRA grant in November 2012. Receded due to appointment at Princeton University, USA.

Outstanding Student Research Prize 2012

- Awarded by the Neutron Scattering Society of America in recognition of outstanding accomplishment in the area of neutron scattering

Traveling scholarships

- Attended the Higher European Research Course for Users of Large Experimental Facilities, hosted by Institut Laue-Langevin and European Light Source, Grenoble, France, 4 March – 4 April 2012
- Traveling scholarship to attend the First Annual NBIA Meeting on ESS Science, Copenhagen, Denmark, 27 June - 1 July 2011
- ORES (Melbourne University) traveling scholarship, 2009

CLAIRE WHITE - CV

- PFPC (Particulate Fluid Processing Centre) traveling scholarship, 2008
- AFUW-SA Jean Gilmore Bursary, 2008
- Melbourne Abroad Travelling Scholarship (Melbourne University), 2008
- CSRP travel scholarship (\$2,000), 2008
- Research Training Conference Assistance Scheme (Melbourne University), 2008

Graduate Research Scholarships

- Australian Postgraduate Award to undertake higher research degree studies, 2007 - 2010
- CSRP (Centre for Sustainable Resource Processing) CRC 2007 - 2010

Dean's Honours List (University of Melbourne)

- 2006 (Eng), 2005 (Eng), 2004 (Eng & Sci), 2003 (Eng & Sci), 2002

Academic Awards (University of Melbourne, 2002 – 2006)

- Argus Scholarship in Civil Engineering for highest academic performance in final year, 2006
- David Victor Isaacs Prize in Civil & Environmental Engineering (Final Year), awarded to the final year student who produces the most innovative and practical design in Civil Engineering, 2006
- Norman Westmore Prize in 421-439 Geotechnical Applications, 2006
- ASI Undergraduate Steel Design Award, 2005
- Fred Green Memorial Prize for highest academic performance, 2005
- John and Ann Gibson Prize, 2005
- AT Danks Exhibition in Structural Engineering, 2005
- Herbert Brooks Exhibition in Mechanics of Solids, 2004
- William Sutherland Prize in Physics 2, 2003
- Dean's Prize in Faculty of Science, 2002 (based on ENTER score, similar to GPA)