

1. **Name:** Aisling Coughlan
2. **Education – degrees, discipline, institution, year:**
Ph.D., Biomedical Materials, Materials and Surface Science Institute, University of Limerick, Limerick, Ireland, 2009
B.S., Biomedical and Advanced Materials, University of Limerick, Limerick, Ireland,
3. **Academic Experience – 8 years**
Assistant Professor, Department of Bioengineering, University of Toledo, Toledo OH (2016-Present)
Visiting Assistant Professor, School of Materials Engineering, Purdue University, West Lafayette IN (2014-2015)
Adjunct Professor, Kazuo Inamori School of Engineering, Alfred University, Alfred, NY (2012-2013)
4. **Non-academic experience:** N/A
5. **Certifications or professional registrations:** N/A
6. **Current membership in professional organizations:**
SFB – Society For Biomaterials
7. **Honors and Awards**
Outstanding Advisor Award Nomination 2019 – University of Toledo
Scholar Institute Program 2017 – Recognized as one of the Top 20 Tenure-Track faculty that that have the potential to succeed.
Outstanding Research Award – Northeastern Bioengineering Conference 2017
8. **Service Activities (most important within and outside the institution)**
National and International:
Member of the Undergraduate Committee – 2014 – Purdue University
Chair of MS&T Student Competitions – 2014 – Purdue University
Member of Administrative Staff Search Committee – 2014 – Purdue University
Chair of Senior Thesis Poster Sessions – 2009 to 2013 – Chair – Alfred University
University, College, and Department: N/A
9. **Most Important Publications: Refereed Journal Articles/Patents:**
Refereed Journal Articles/Patents/Conference Papers – last 5 years (partial list)
'Synthesis, characterization and solubility analysis of amorphous SiO₂-CaO-Na₂O-P₂O₅ scaffolds for hard tissue repair'; S.S. Chon, L. Piraino, S. Mokhtari, E.A. Krull, A. Coughlan, Y. Gong, N.P. Mellott; J of Non-Crystalline Solids 490. 1-12 (2018)
'Investigating the Effect of Glass Ion Release on the Cytocompatibility, Antibacterial Efficacy and Antioxidant Activity of Y₂O₃/CeO₂ doped SiO₂-SrO-Na₂O glasses'; L.M. Placek, T.J. Keenan, A. Coughlan, A.W. Wren; Biomedical Glasses, 4/1. 32-44 (2018)
'Synthesis and Characterization of Mechanically Stable Amorphous SiO₂-CaO-Na₂O-P₂O₅ Scaffolds for Hard Tissue Repair'; L. Piraino, S. Chon, S. Mokhtari, E. Krull, A. Coughlan, Y. Gong, N. Mellott, T. Keenan; Materials Science & Engineering C. (2018)
'Copper containing Glass Polyalkenoate Cements based on SiO₂-ZnO-CaO-SrO-P₂O₅ Glasses: Glass Characterization, Physical and Antibacterial Properties'; S. Mokhtari, K.D. Skelly, A. Coughlan, E.A. Krull, N.P. Mellott, Y. Gong, R. Borges, A.W. Wren; J. Mat. Sci. 52/15 (2017). 8886-8903
'The Continuing Effort to Enhanced Learning of Mechanical Behavior of Materials via Combined Experiments and nanoHUB Simulations: Learning Modules for Sophomore MSE Students'; A. Coughlan, H.A. Diefes-Dux, K.A. Douglas, T.A. Faltens & D. Johnson; MRS Advances. 1-6 (2016)
'Structural characterization and anti-cancerous potential of gallium bioactive glass/hydrogel composites'; T.J. Keenan, L.M. Placek, A. Coughlan, G.M. Bowers, M.M. Hall & A.W. Wren; Carbohydrate Polymers. 153 (2016). 482-491

'Drug-Eluting Composite Materials: A Comparative Study using Vancomycin and RNPA1000 to Inhibit Growth of Staphylococcus aureus' ; T. Eidem, A. Coughlan, M.R. Towler, P. Dunman & A.W. Wren; J. Mat. Sci: Materials in Medicine. 28/8(2014). 1235-1246

'Degradable Borate Glass Polyalkenoate Cements'; L. Shen, A. Coughlan, M.R. Towler & M.M. Hall; J. Mat. Sci: Materials in Medicine. 25/4(2014). 965-973

'Preliminary Investigation of the Dissolution Behavior, Cytocompatibility, Effects of Fibrinogen Conformation and Platelet Activation for Radiopaque Embolic Particles'; S. Kehoe, M.L. Trembby, A. Coughlan, B. Abraham, M.R. Towler, J.K. Rainey & D. Boyd; Journal of Functional Biomaterials. 4/3(2013). 89-113

'Fill Volume as an Indicator of Surface Heterogeneity in Glass Vials for Parenteral Packaging' ; N.W. Kucko, T.J. Keenan, A. Coughlan, M.M. Hall; Journal of Pharmaceutical Sciences. 102/6(2013). 1690-1695

'Does elevating silver content in zinc-based glass polyalkenoate cements increase their antibacterial efficacy against two common bacteria using the agar gel diffusion method?' ; A. Coughlan, S.M. Breed, C. Ashraf, J.A. Cardinale, M.M. Hall & M.R. Towler; J. Biomat. App. 27/7 (2013). 840-847

Conference presentations and posters – last 5 years (partial list)

'An Osteoconductive Zn-Bioactive Glass Treats 99.99% of Common Surgical Site Infection'; A. Coughlan, L. Sanders & K. Raghuraman; Materials Science and Technology (2018).

'The Antibacterial Efficiency and Biocompatibility of an Ag Containing Bioactive Bone Void Filler'; L. Sanders, K. Raghuraman & A. Coughlan; Materials Science and Technology (2018).

'Evaluation of Novel Se-Bioactive Glass Series for Chemotherapeutic Applications'; R. Potts, K. Raghuraman & A. Coughlan; Bioengineering Conference (NEBEC), 2017 43rd Annual Northeast. (2017).

'Students' Struggles to Explain Atomic Behaviour of Metals in a Tensile Test Lab', A. Coughlan, , D.R. Johnson, K.A. Douglas, A. Strachan, T.A. Faltens & H.A. Diefes-Dux; 2015 American Society of Engineering Education Annual Conference and Exposition; Seattle, WA. (2015).

'Novel Antibacterial Hemostatic Sealent', A. Coughlan; Materials Science & Technology 2014; Pittsburg, PA. (2014).

'Comparison of the Physical Properties of an Innovative Glass Polyalkenoate Cement to Commercial Dental Materials', A. Coughlan, F. R. Laffir, M. R. Towler & A.W. Wren; 14th Annual Meeting and Exposition, Society of Biomaterials; Denver, CO. (2014).

'Structural Analysis of Low Level Ag₂O Substitution into a SiO₂-CaO-Na₂O Glass?' A. Coughlan, S.M. Breed, M.M. Hall, D. Boyd, A.W. Wren & M.R. Towler; 33rd Annual International Conference on Biochemical, Biprocess and Biomedical Engineering; Bangkok, Thailand. (2012).

'Increasing the Quantity of Silver in Zinc-Based Glass Polyalkenoate Cement: Is there an Improvement in Antibacterial Efficacy?' A. Coughlan, S.M. Breed, M.M. Hall & M.R. Towler; 38th Annual Northeast Bioengineering Conference; Philadelphia, PA, USA. (2012).

'Risk Factors Associated with Glass Delamination.' M.M. Hall, A. Coughlan, C. Flynn & M.R. Towler; Parental Packaging Strategies for Drug Developers; Philadelphia, PA, USA. (2012).

Professional development activities in the last five years:

NSF - Grant Training Workshop – Case Western – 2017