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Education:

- Doctor of Philosophy in Engineering Science and Mechanics, 2004: The Pennsylvania State University, University Park, PA.
  Advisor: Dr. Stephen Fonash, The Kunkle Chair of Engineering Sciences.
- Bachelor of Science in Science (focus in life science), 1997: The Pennsylvania State University, University Park, PA.

Employment:

- 2021-Present: **Director**, Center of Excellence in Industrial Biotechnology, Pennsylvania State University, Biomedical Department, University Park, PA
- 2020-Present: **Professor in Biomedical Engineering**, Pennsylvania State University, Biomedical Department, University Park, PA
- 2019-Present: **Founder** of Osteosynth LLC, State College, PA
- 2016-2020: **Associate Professor in Biomedical Engineering**, Pennsylvania State University, Biomedical Department, University Park, PA
- 2016-Present: **Adjunct Faculty in Biological Engineering**, Louisiana State University, Biological and Agricultural Engineering Department, Baton Rouge, LA.
- 2016-Present: **Adjunct Faculty in Chemistry**, Louisiana State University, Chemistry Department, Baton Rouge, LA
- 2014-2017: **Founder** of Applied Biopolymers, LLC., Baton Rouge, LA.
- 2014-2016: **Associate Professor in Biological Engineering**, Louisiana State University, Bioengineering Department, Baton Rouge, LA
- 2008-2014: **Assistant Professor in Biological Engineering**, Louisiana State University, Bioengineering Department, Baton Rouge, LA
- 2007-2008: **President and COO of Nanohorizons**, State College, PA
- 2005-2007: **Vice President of Operations, Nanohorizons**, State College, PA
- 2002-2005: **Director of Research and Development, Nanohorizons**, State College, PA

Research Experience:

- 2008-Present Penn State University, Biomedical Engineering Department, University Park, PA
  - Cell therapy development for regenerative medicine
  - Biomanufacturing of tunable hybrid synthetic/natural implantable biomaterials.
  - Optogenetic and magnetogenetic tools to modulate post-transcriptional gene regulation.

- 2004-2008: NanoHorizons, State College, PA
  - High throughput, high yield biologically inspired, antimicrobial nanoparticle synthesis.
  - Dispersion and integration technology for nanomaterials in synthetic and non-synthetic polymers.
  - Development of nanoscale delivery vehicles for integrating therapeutic agents in medical devices.
  - Development of surface mediated laser desorption/ionization devices.
  - Development of high performance, flexible transistor arrays.

- 1999-2004: Doctoral Research at the Nanofabrication Facility, The Pennsylvania State University, University Park, PA. Advisor: Dr. Stephen Fonash
    - Developed chip based, microdevice for the biotransformation and analysis of drug compounds.
    - Development of nanoparticle based, metal enhanced fluorescence tags to improve sensitivity of nucleic acid microarray assays.
    - Explored the impact of interfacial chemistry on inorganic nanoparticle dispersion in polymer composites.
    - Examined nanostructured, deposited thin films for matrix-free, surface mediated laser desorption/ionization mass spectrometry.
    - Examined the impact of nanostructured deposited thin film surfaces on cell patterning, growth and gene expression.

- 1997- 1999: Research Assistant at NYU Medical Center, New York, NY. Advisor: Dr. Thomas Hornyak.
    - Developed pTRP-2/MASH-1/EGFP transgenic mouse for tracking and perturbing neural crest development.
    - Examined DOPA-chrome tautomerase expression and regulation during neuronal development.
    - Developed pTRP-2/LAC-Z and EGFP transgenic mouse lines for examining neural crest proliferation, migration and differentiation.

- 1997-1998: Part-Time Research Assistant at Sloan Kettering Memorial Hospital, New York, NY. Lab of Dr. Robert Benezra.
    - Research focused on cell cycle control and tumor growth regulation by MAD, Bub and ID genes.
    - Characterized and interbred three Inhibitor of DNA Binding (ID 1-3), MAD and Bub knockout transgenic mouse lines to examine tumor growth regulation.

- 1996-1997: Undergraduate Research, Nutrition Department, The Pennsylvania State University, PA. Advisor: Dr. Domingo Pinero in the lab of Dr. John Beard.
    - Researched the effects iron deficiency on neuronal development.
    - Examined iron dependent enzyme regulation and function.

Teaching Experience:

- 2016-Present: BME 450W Senior Design Capstone, BME 497 Introduction to Regulatory Affairs, BioE 590 Graduate Seminar, BME 591 Ethics and Professionalism
- 2008-2016: BE 4290 & BE 4292 Engineering Design Capstone Course Series, BE 4305 Engineering Entrepreneurship I, BE 4306 Engineering Entrepreneurship II, BE 4335 Tissue Engineering, BE 4336 Biocompatibility & Surface Modification of Materials, BE 3490 Process Engineering, BE 7909 Biomaterials Characterization, BE 7910 Nanoparticles, BE 7910 Advanced Tissue Engineering, BE1250 Introduction to Biological Engineering. Louisiana State University, Baton Rouge, LA
- 2003-2008: Lecturer in Biotech 571, "Nanobiotechnology", The Pennsylvania State University, University Park, PA
- 2001-2003: Lecturer in Nanobiotechnology for the NMT program, The Pennsylvania State University, University Park, PA
- 2000-2003: Instructor for "Nanotech Camps" for secondary school students, Nanofabrication Facility, The Pennsylvania State University, University Park, PA

Teaching Awards:

- 2016 Biomedical Engineering Teaching Honor
- 2011 Gamma Sigma Delta's Teacher Merit Honor Roll
- 2012 Tiger Athletic Foundation Teaching Award
- 2013 Gamma Sigma Delta's Teacher Merit Honor Roll

Chaired Graduate Committees:

- Nicolas Alden, "Magnetogenetic Manipulation of Cancer Stem Cell Function", (PhD 2023).
- Nazmiye Celik, "Post-transcriptional Modification to Modulate Complex Heterotypic Progenitor Differentiation", (PhD expected 2023)
- Yiming Liu, "Spatiotemporally Modulated miRNA Delivery for Modulation of the Immune Microenvironment in Tumor Ablation", (PhD expected 2022).
- Lisa Krieg, "Complex Heterotypic Cell Sheet Grafting Techniques for Rotator Cuff Enthesis Repair" (PhD, Expected 2022).
- Jonathan Casey, "Amf-Rf Mediated Release Of Potential Therapeutic Mir-148b Mimic In Non-Small Cell Lung Cancer Cells", (PhD 2021).
- Mohammad Abu-Laban, "Spatiotemporal Delivery of miRNAs for Dual Modulation of Osteogenesis & Proliferation in hBMSCs", (PhD, 2019).
- Anoosha Forghani "Fabrication of a quasi-3D vascularized bone like construct", (PhD 2019).
- Corey Landry, "Plasmonic Modulation of Biological Tether Photocleavage". (MBE 2015)
- Nicolas Totaro, "Recent Advances and Additives of Bone Cement and Bone Augments for Arthroplastic Surgeries". (MBE, 2015).
- Cong Chen, "Thiol-ene scaffolds as synthetic augments and grafts for repair of critical sized bone defects", (Ph.D. 2015).
- Ammar Qureshi, "Photoactivated miRNA delivery system for directed differentiation of adipose-derived stromal cells", (Ph.D. 2014).
- Mark Hoppens, "Investigation of ceragenin core/shell nanoparticle conjugates as novel, selective antimicrobials and diagnostics for the treatment of antimicrobial resistant infections", (MBE 2013)
- Lekeith Terrell, "Influence of Nanocomposite Composition on Adult, Adipose Derived Stem Cells", (MBE Fall 2012).
- Andre Zanetti, "Modulation of hASC osteogenesis and inflammatory response by Akermanite/PCL nanocomposites", (Ph.D. 2012).
- Emily Hodges, "Anti-microbial Self-Assembling "Click" Monolayers utilizing Silver Nanoparticles for Indwelling Medical Devices", (MBE 2011).
- Ammar Qureshi, "Biocompatible/bioabsorbable silver nanocomposite coatings", (MBE 2010).

Grants/Fellowships (PI Listed First):

- **Hayes D**., Wong PK, Pritchard J., "RECODE: Real-time monitoring, modeling and manipulation of progenitor co-differentiation in heterotypic systems", $1,500,000, NSF, 2021-2024
- **Hayes D**., Simon J, Dhawan A., "Ultrasound Responsive Hydrogels for "On-Demand" Sustained Drug Delivery", $316,145, CDMRP, 2021-2023.
- Simon J., **Hayes D**., "Ultrasound to diagnose and treat heterotopic ossification", $315,724, 2021-2023.
- Ozbolat, I. **Hayes D.**, Lewis G., Risk E., "Intraoperative bioprinting of composite tissues with zonal stratification for craniomaxillofacial reconstruction", CDMRP, $2,800,000, 2020-2024.
- Rotkin S., **Hayes D**., Kuchipudi S., "RAPID: Collaborative Research: One-step Express Test for Presymptomatic Detection to Prevent COVID-19 Spread", NSF, $164,000 2020-2021.
- **Hayes D.**, Ravnic D., "miRNA enhanced vasculogenesis for treatment of diabetic microvascular dysfunction", Grace Woodward collaborative grant, $50,000, 2019-2021.
- Ozbolat, I. **Hayes D.**, "Micro-RNA-guided Engineering of Prevascularized Spheroids as a Novel Material for Bone Tissue Repair ", MRI Penn State University, $50,000, 2018-2020.
- **Hayes D.**, Guided Magnetically Actuated Therapy for Bone Regeneration", CDMRP, $311,000, 2018-2020.

- Glick A., **Hayes D**., "Therapeutic Modulation of the Tumor Immune Microenvironment in Skin Cancer with Localized Activation of Nanoparticle Delivered siRNA".IEE PSU, $50,000, 2018-2021.
- **Hayes D**., Ravnic D., "Bone Foam-Hybrid Composite Bone Augments and Grafts" ENGINE Grant, $75,000, 2016-2017.
- J.-W. Choi, W. T. Monroe, S. Park, **D. J. Hayes**, J. Jung, and K. Park, "A Nanodroplet Printing System for Sensors, Materials, and Bioelectronic Research," LA Board of Regents, $77,000. 2016-2017,
- **Hayes D**., Devireddy R., Duran, Spatiotemporal Modulation of Osteogenesis in a 3-D Stromal/Stem Cell Model, NIH R01 $1,788,000. 2015-2020,
- Gimble J., **Hayes D**., 2016-2018, "Decellularized Adipose Extracellular Matrix for Critical Sized Defect Repair", Musculoskeletal Transplant Foundation, $300,000.
- **Hayes D, J**. 2013-2018, CAREER: Photoactivated miRNA delivery for modulation of human adipose stromal cell differentiation. National Science Foundation, $400,000
- Boldor, D., **Hayes D**. 2014-2017, Bio-oil Production and Upgrading in Electromagnetic Fields Using Supported Nanostructured Catalysts, NSF $299,000.
- **Hayes D**., 2014-2017 Modulating the Mechanical and Biological Properties of Hybrid Decellularized Adipose Extracellular Matrix Biomaterials, NSF $274,000.
- Warner I., Hung F., **Hayes D.**, 2013-2016, Enhancing Bioanalytical Applications of nanoGUMBOS , National Science Foundation, $412,000.
- **Hayes D**., Pojman J. 2015-2016, Bone foam-synthetic composite bone graft, LIFT Commercialization Grant, LSU, $37,500.
- Nikitopoulos D, **Hayes D,** Thompson K, Devireddy R, Waggenspack W. 2015-2016, "Learn By Doing" - Additive Manufacturing Prototyping, LA Board of Regents, $195,000.
- **Hayes D,**. 2015-2016, Summer Undergraduate Research Grant: Visible Light Activated Gold Nanoparticle Based microRNA Delivery System, LA Board of Regents, $4,500.
- **Hayes D**., 2014-2015 Nanoplasmonic Materials as Visible and nIR Modulated Gene Delivery Vehicles, NSF EPSCoR PFund, $10,000.
- **Hayes D**., Boldor D. 2013-2014, Development of Nanostructured, Functionalized Catalysts for Production of Long Chain Asphalt Binders from Renewable Biomass, Louisiana Transportation Research Center, $28,510.
- **Hayes D. J**., R. Barbosa, 2012-2013, Pesticide Application Efficiency and Drift Potential from Aerial and Ground Spraying, Soybean Growers Association of LA. $10,500
- Warner I., Hung F., **Hayes D**. 2012-2014, Assessment of the Quartz Crystal Microbalance (QCM) as a Molecular Weight Discriminator, National Science Foundation, $288,000
- Monroe W.T., **Hayes D. J**., Husser R., Savoy R., Russin J., 2010-2013, Infrastructure Upgrades for Nano and Biotechnology Research at the LSU Agricultural Center, National Science Foundation, $597,807
- **Hayes D**., 2011-2012, Infection Resistant Nanocomposite Scaffolds for Critical Sized Defect Repair, Longwell Family Foundation, $50,000
- **Hayes, D.J**., 2004-2005, Developing Nanostructured Deposited Thin films for Laser Desorption Mass Spectrometry, Pennsylvania Life Science Greenhouse Grant, $100,000,
- **Hayes D**., Burlinson R.F., 2003-2005, Nanoparticle Based Antimicrobial Additives for use in Central Venous Catheter Coatings, Arrow International Inc., Development Grant, $250,000

Issued Patents:

- 10,307,750 Production of oil by pyrolysis of coal
- 10,010,881 Catalysts useful for biomass pyrolysis and bio-oil upgrading
- 9,782,744 Detection and molecular weight determination of organic vapors
- 8,183,167, Wash-Durable, Antimicrobial And Antifungal Textile Substrates
- 7,427,526 Deposited thin films and their use in separation and sacrificial layer applications

- 7,309,620 Use of sacrificial layers in the manufacture of high performance systems on tailored substrates
- 7,238,594 Controlled nanowire growth in permanent, integrated nano-templates and methods of fabricating sensor and transducer structures
- 7,122,790 Matrix-free desorption ionization mass spectrometry using tailored morphology layer devices
- 7,052,616 Fabrication of molecular scale devices using fluidic assembly
- 6,794,196 Deposited thin films and their use in detection, attachment and bio-medical applications

Pending Patents:

- 2019014549 Compositions and methods for targeted delivery of therapeutic and/or diagnostic species
- 61/721,607, Thiol-Acrylate Nanocomposite Foams
- 20080135826, Controlled nanowire in permanent integrated nano-templates and method of fabricating sensor and transducer structures (Divisional)
- 20050176228, Controlled nanowire growth in permanent, integrated nano-templates and methods of fabricating sensor and transducer structures (Divisional)
- 20030157783, Use of sacrificial layers in the manufacture of high performance systems on tailored substrates (Divisional)
- 20030040173, Fabrication of molecular scale devices using fluidic assembly (Divisional)
- 20020187312, Matrix-free desorption ionization mass spectrometry using tailored morphology layer devices (Divisional)
- 20020048531, Deposited thin films and their use in detection, attachment, and bio-medical applications (Divisional)
- 20020020053, Deposited thin films and their use in separation and sacrificial layer applications (Divisional)

Publications/Conference Proceedings: (Current h-index=26):
https://scholar.google.com/citations?hl=en&user=P8uQdTMAAAAJ&view_op=list_works&sortby=pubdate

1. Frazier T, Williams C, Henderson M, Duplessis T, Rogers E, Wu X, Hamel K, Martin EC, Mohiuddin O, Shaik S, Devireddy R, Rowan BG, Hayes DJ, Gimble JM. Breast Cancer Reconstruction: Design Criteria for a Humanized Microphysiological System. Tissue Engineering Part A. 2021;27(7-8):479-88. doi: 10.1089/ten.tea.2020.0372
2. Shaik S, Martin E, Hayes D, Gimble J, Devireddy R. microRNA Sequencing of CD34+ Sorted Adipose Stem Cells Undergoing Endotheliogenesis. Stem Cells and Development. 2021;30(5):265-88.
3. Liu Y, Bailey JT, Abu-Laban M, Li S, Chen C, Glick AB, Hayes DJ. Photocontrolled miR-148b nanoparticles cause apoptosis, inflammation and regression of Ras induced epidermal squamous cell carcinomas in mice. Biomaterials. 2020;256:120212.
4. Casey JS, Arrizabalaga JH, Abu-Laban M, Becca JC, Rose BJ, Strickland KT, Bursavich JB, McCann JS, Pacheco CN, Jensen L, Attaluri A, Hayes DJ. Alternating magnetic field mediated release of fluorophores from magnetic nanoparticles by hysteretic heating. Journal of Colloid and Interface Science. 2020;571:348-55.
5. Mohiuddin OA, Motherwell JM, Rogers E, Bratton MR, Zhang Q, Wang G, Bunnell B, Hayes DJ, Gimble JM. Characterization and Proteomic Analysis Of Decellularized Adipose Tissue Hydrogels Derived From Lean And Overweight/Obese Human Donors. Advanced Biosystems. 2020;4(10):2000124.
6. Frazier T, Alarcon A, Wu X, Mohiuddin OA, Motherwell JM, Carlsson AH, Christy RJ, Edwards JV, Mackin RT, Prevost N. Clinical Translational Potential in Skin Wound Regeneration for Adipose-Derived, Blood-Derived, and Cellulose Materials: Cells, Exosomes, and Hydrogels. Biomolecules. 2020;10(10):1373.
7. Forghani A, Koduru SV, Chen C, Leberfinger AN, Ravnic DJ, Hayes DJ. Differentiation of Adipose Tissue-Derived CD34+/CD31- Cells into Endothelial Cells In Vitro. Regen Eng Transl Med.

2020;6(1):101-10. Epub 2020/12/22. doi: 10.1007/s40883-019-00093-7. PubMed PMID: 33344757; PMCID: PMC7747864.

8. Mohiuddin OA, O'Donnell BT, Poche JN, Iftikhar R, Wise RM, Motherwell JM, Campbell B, Savkovic SD, Bunnell BA, Hayes DJ. Human Adipose-Derived Hydrogel Characterization Based on In Vitro ASC Biocompatibility and Differentiation. Stem Cells International. 2019;2019.
9. Abu-Laban M, Hamal P, Arrizabalaga JH, Forghani A, Dikkumbura AS, Kumal RR, Haber LH, Hayes DJ. Combinatorial Delivery of miRNA-Nanoparticle Conjugates in Human Adipose Stem Cells for Amplified Osteogenesis. Small. 2019;15(50).
10. Rahimtoroghi E, Kasra M, Hayes D, editors. Yarn Reinforced Gelatin Hydrogel As A New Scaffold For Tissue Engineering. 2019 26th National and 4th International Iranian Conference on Biomedical Engineering (ICBME); 2019: IEEE.
11. Mohiuddin OA, Campbell B, Poche N, Ma M, Rogers E, Gaupp D, Harrison MA, Bunnell BA, Hayes DJ, Gimble JM. Decellularized adipose tissue hydrogel promotes bone regeneration in critical-sized mouse femoral defect model. Frontiers in Bioengineering and Biotechnology. 2019;7:211.
12. Moncal KK, Aydin RST, Abu-Laban M, Heo DN, Rizk E, Tucker SM, Lewis GS, Hayes D, Ozbolat IT. Collagen-infilled 3D printed scaffolds loaded with miR-148b-transfected bone marrow stem cells improve calvarial bone regeneration in rats. Materials Science and Engineering: C. 2019:110128.
13. Shaik S, Martin EC, Hayes DJ, Gimble JM, Devireddy RV. Transcriptomic Profiling of Adipose Derived Stem Cells Undergoing Osteogenesis by RNA-Seq. Scientific reports. 2019;9(1):11800.
14. Bursavich J, Abu-Laban M, Muley PD, Boldor D, Hayes DJ. Thermal performance and surface analysis of steel-supported platinum nanoparticles designed for bio-oil catalytic upconversion during radio frequency-based inductive heating. Energy Conversion and Management. 2019;183:689-97.
15. Sengupta A, Blades M, Hayes DJ, Rotkin SV. Framework for Nucleic Acid Cellular Delivery using Carbon Nanotubes Without Chemical Functionalization. Biophysical Journal. 2019;116(3):445a.
16. Koduru SV, Leberfinger AN, Pasic D, Forghani A, Lince S, Hayes DJ, Ozbolat IT, Ravnic DJ. Cellular Based Strategies for Microvascular Engineering. Stem Cell Reviews and Reports. 2019;15(2):218-40.
17. Tavangarian F, Zolko CA, Fahami A, Forghani A, Hayes D. Facile synthesis and structural insight of nanostructure akermanite powder. Ceramics International. 2019;45(6):7871-7.
18. Forghani A, Koduru SV, Chen C, Leberfinger AN, Ravnic DJ, Hayes DJ. Differentiation of Adipose Tissue–Derived CD34+/CD31− Cells into Endothelial Cells In Vitro. Regenerative Engineering and Translational Medicine. 2019.
19. Duan W, Chen C, Haque M, Hayes D, Lopez MJ. Polymer-mineral scaffold augments in vivo equine multipotent stromal cell osteogenesis. Stem Cell Res Ther. 2018;9(1):60. Epub 2018/03/11. doi: 10.1186/s13287-018-0790-8.
20. Li S, Poche JN, Liu Y, Scherr T, McCann J, Forghani A, Smoak M, Muir M, Berntsen L, Chen C, Ravnic DJ, Gimble J, Hayes DJ. Hybrid Synthetic-Biological Hydrogel System for Adipose Tissue Regeneration. Macromol Biosci. 2018;18(11):e1800122.
21. Forghani A, Garber L, Chen C, Tavangarian F, Tighe TB, Devireddy R, Pojman JA, Hayes D. Fabrication and characterization of thiol-triacrylate polymer via Michael addition reaction for biomedical applications. Biomedical materials. 2018;14(1):015001
22. Thomas-Porch C, Li J, Zanata F, Martin EC, Pashos N, Genemaras K, Poche JN, Totaro NP, Bratton MR, Gaupp D, Frazier T, Wu X, Ferreira LM, Tian W, Wang G, Bunnell BA, Flynn L, Hayes D, Gimble JM. Comparative proteomic analyses of human adipose extracellular matrices decellularized using alternative procedures. Journal of biomedical materials research Part A. 2018;106(9):2481-93.

23. Abu-Laban M, Kumal RR, Casey J, Becca J, LaMaster D, Pacheco CN, Sykes DG, Jensen L, Haber LH, Hayes DJ. Comparison of thermally actuated retro-diels-alder release groups for nanoparticle based nucleic acid delivery. J Colloid Interface Sci. 2018;526:312-21.
24. McElheny C, Hayes D, Devireddy R. Design and Fabrication of a Low-Cost Three-Dimensional Bioprinter. Journal of Medical Devices. 2017;11(4):041001.
25. Bateman ME, Strong AL, Hunter RS, Bratton MR, Komati R, Sridhar J, Riley KE, Wang G, Hayes DJ, Boue SM. Osteoinductive effects of glyceollins on adult mesenchymal stromal/stem cells from adipose tissue and bone marrow. Phytomedicine. 2017;27:39-51.
26. Forghani A, Kriegh L, Hogan K, Chen C, Brewer G, Tighe TB, Devireddy R, Hayes D. Fabrication and characterization of cell sheets using methylcellulose and PNIPAAm thermoresponsive polymers: A comparison Study. Journal of Biomedical Materials Research Part A. 2017;105(5):1346-54.
27. Abu-Laban M, Muley PD, Hayes DJ, Boldor D. Ex-situ up-conversion of biomass pyrolysis bio-oil vapors using Pt/Al2O3 nanostructured catalyst synergistically heated with steel balls via induction. Catalysis Today. 2017;291:3-12.
28. Shaik S, Hayes D, Gimble J, Devireddy R. Inducing Heat Shock Proteins Enhances the Stemness of Frozen–Thawed Adipose Tissue-Derived Stem Cells. Stem cells and development. 2017;26(8):608-16.
29. Kumal RR, Abu-Laban M, Landry CR, Kruger B, Zhang Z, Hayes DJ, Haber LH. Plasmon-Enhanced Photocleaving Dynamics in Colloidal MicroRNA-Functionalized Silver Nanoparticles Monitored with Second Harmonic Generation. Langmuir. 2016;32(40):10394-401.
30. Strong, A. L.; Hunter, R. S.; Jones, R. B.; Bowles, A. C.; Dutreil, M. F.; Gaupp, D.; Hayes, D. J.; Gimble, J. M.; Levi, B.; McNulty, M. A., "Obesity inhibits the osteogenic differentiation of human adipose-derived stem cells" *Journal of Translational Medicine* **2016**, *14*, 1.
31. Xuan, S.; Lee, C.-U.; Chen, C.; Doyle, A. B.; Zhang, Y.; Guo, L.; John, V. T.; Hayes, D.; Zhang, D., "Thermoreversible and Injectable ABC Polypeptoid Hydrogels: Controlling the Hydrogel Properties through Molecular Design" Chemistry of Materials **2016**, 28, 727-737.
32. Kanitkar, A.; Smoak, M.; Chen, C.; Aita, G.; Scherr, T.; Madsen, L.; Hayes, D., "Synthesis of novel polyesters for potential applications in skin tissue engineering" Journal of Chemical Technology and Biotechnology **2016**, 91, 733-741.
33. Kumal, R. R.; Landry, C. R.; Abu-Laban, M.; Hayes, D. J.; Haber, L. H., "Monitoring the Photocleaving Dynamics of Colloidal MicroRNA-Functionalized Gold Nanoparticles Using Second Harmonic Generation" *Langmuir* **2015**, *31*, 9983-9990.
34. Rezai-Rad, M.; Bova, J. F.; Orooji, M.; Pepping, J.; Qureshi, A.; Del Piero, F.; Hayes, D.; Yao, S., "Evaluation of bone regeneration potential of dental follicle stem cells for treatment of craniofacial defects" *Cytotherapy* **2015**, *17*, 1572-1581.
35. Alfaro, L.; Hayes, D.; Boeneke, C.; Xu, Z.; Bankston, D.; Bechtel, P. J.; Sathivel, S., "Physical properties of a frozen yogurt fortified with a nano-emulsion containing purple rice bran oil" *LWT-Food Science and Technology* **2015**, *62*, 1184-1191.
36. Smoak, M.; Hogan, K.; Kriegh, L.; Chen, C.; Terrell, L. B.; Qureshi, A. T.; Monroe, W. T.; Gimble, J. M.; Hayes, D. J., "Modulation of mesenchymal stem cell behavior by nano-and micro-sized β-tricalcium phosphate particles in suspension and composite structures" *Journal of Nanoparticle Research* **2015**, *17*, 1-14.
37. Totaro, N. P.; Murphy, Z. D.; Burcham, A. E.; King, C. T.; Scherr, T. F.; Bounds, C. O.; Dasa, V.; Pojman, J. A.; Hayes, D. J., "In vitro evaluation of thermal frontally polymerized thiol–ene composites as bone augments" *Journal of Biomedical Materials Research Part B: Applied Biomaterials* **2015**.

38. Qureshi, A. T.; Doyle, A.; Chen, C.; Coulon, D.; Dasa, V.; Del Piero, F.; Levi, B.; Monroe, W. T.; Gimble, J. M.; Hayes, D. J., "Photoactivated miR-148b–nanoparticle conjugates improve closure of critical size mouse calvarial defects" Acta Biomater. **2015**, 12, 166-173.

39. Chen, C.; Watkins-Curry, P.; Smoak, M.; Hogan, K.; Deese, S.; McCandless, G. T.; Chan, J. Y.; Hayes, D. J., "Targeting Calcium Magnesium Silicates for Polycaprolactone/Ceramic Composite Scaffolds" *ACS Biomaterials Science & Engineering* **2015**, *1*, 94-102.

40. Kanitkar, A.; Chen, C.; Smoak, M.; Hogan, K.; Scherr, T.; Aita, G.; Hayes, D., "In vitro characterization of polyesters of aconitic acid, glycerol, and cinnamic acid for bone tissue engineering" *Journal of biomaterials applications* **2015**, *29*, 1075-1085.

41. Chen, C.; Garber, L.; Smoak, M.; Fargason, C.; Scherr, T.; Blackburn, C.; Bacchus, S.; Lopez, M. J.; Pojman, J. A.; Del Piero, F.; Hayes, D. J., "In Vitro and In Vivo Characterization of Pentaerythritol Triacrylate-co-Trimethylolpropane Nanocomposite Scaffolds as Potential Bone Augments and Grafts" Tissue Eng Part A **2015**, 21, 320-331.

42. Smoak, M.; Chen, C.; Qureshi, A.; Garber, L.; Pojman, J. A.; Janes, M. E.; Hayes, D. J., "Antimicrobial cytocompatible pentaerythritol triacrylate-co-trimethylolpropane composite scaffolds for orthopaedic implants" *J. Appl. Polym. Sci.* **2014**, *131*.

43. Regmi, B. P.; Speller, N. C.; Anderson, M. J.; Brutus, J. O.; Merid, Y.; Das, S.; El-Zahab, B.; Hayes, D. J.; Murray, K. K.; Warner, I. M., "Molecular weight sensing properties of ionic liquid-polymer composite films: theory and experiment" Journal of Materials Chemistry C **2014**, 2, 4867-4878.

44. Dumke, J. C.; Qureshi, A.; Hamdan, S.; El-Zahab, B.; Das, S.; Hayes, D. J.; Boldor, D.; Rupnik, K.; Warner, I. M., "Photothermal Response of Near-Infrared-Absorbing NanoGUMBOS" *Appl Spectrosc* **2014**, *68*, 340-352.

45. Hoppens, M. A.; Sylvester, C. B.; Qureshi, A. T.; Scherr, T.; Czapski, D. R.; Duran, R. S.; Savage, P. B.; Hayes, D., "Ceragenin Mediated Selectivity of Antimicrobial Silver Nanoparticles" ACS applied materials & interfaces 2014, 6, 13900-13908.

46. Hoppens, M. A.; Wheeler, Z. E. W.; Qureshi, A. T.; Hogan, K.; Wright, A.; Stanley, G. G.; Young, D.; Savage, P.; Hayes, D., "Maghemite, silver, ceragenin conjugate particles for selective binding and contrast of bacteria" Journal of Colloid and Interface Science **2014**, 413, 167-174.

47. Dumke, J. C.; Qureshi, A.; Hamdan, S.; Rupnik, K.; El-Zahab, B.; Hayes, D. J.; Warner, I. M., "In vitro activity studies of hyperthermal near-infrared nanoGUMBOS in MDA-MB-231 breast cancer cells" Photochemical & Photobiological Sciences **2014**, 13, 1270-1280.

48. Qureshi, A. T.; Monroe, W. T.; Dasa, V.; Gimble, J. M.; Hayes, D. J., "miR-148b–Nanoparticle conjugates for light mediated osteogenesis of human adipose stromal/stem cells" *Biomaterials* **2013**, *34*, 7799-7810.

49. Zhou, C.; Shi, Q.; Guo, W.; Terrell, L.; Qureshi, A. T.; Hayes, D. J.; Wu, Q., "Electrospun Bio-Nanocomposite Scaffolds for Bone Tissue Engineering by Cellulose Nanocrystals Reinforcing Maleic Anhydride Grafted PLA" *ACS Applied Materials & Interfaces* **2013**, *5*, 3847-3854.

50. Qureshi, A. T.; Landry, J. P.; Dasa, V.; Janes, M.; Hayes, D. J., "Can a novel silver nano coating reduce infections and maintain cell viability in vitro?" *Journal of biomaterials applications* **2014**, *28*, 1028-1038.

51. Cole, M. R.; Li, M.; Jadeja, R.; El-Zahab, B.; Hayes, D.; Hobden, J. A.; Janes, M. E.; Warner, I. M., "Minimizing human infection from Escherichia coli O157:H7 using GUMBOS" *Journal of Antimicrobial Chemotherapy* 2013.

52. Zanetti, A. S.; Sabliov, C.; Gimble, J. M.; Hayes, D. J., "Human adipose-derived stem cells and three-dimensional scaffold constructs: a review of the biomaterials and models currently used for bone regeneration" *Journal of biomedical materials research. Part B, Applied biomaterials* 2013, *101*, 187-199.

53. Zanetti, A. S.; McCandless, G. T.; Chan, J. Y.; Gimble, J. M.; Hayes, D. J., "In vitro human adipose-derived stromal/stem cells osteogenesis in akermanite:poly-ε-caprolactone scaffolds" *Journal of Biomaterials Applications* 2014, *28*, 998-1007.

54. Brown, P. K.; Qureshi, A. T.; Moll, A. N.; Hayes, D. J.; Monroe, W. T., "Silver nanoscale antisense drug delivery system for photoactivated gene silencing" *ACS Nano* **2013**, *7*, 2948-2959.

55. Garber, L.; Chen, C.; Kilchrist, K. V.; Bounds, C.; Pojman, J.; Hayes, D., "Thiol Acrylate Nanocomposite Foams for Critical Size Bone Defect Repair: A Novel Biomaterial " *Journal of Biomedical Materials Research Part A*. 2013.

56. Scherr, T.; Quitadamo, C.; Tesvich, P.; Park, D. S.-W.; Tiersch, T.; **Hayes, D**.; Choi, J.-W.; Nandakumar, K.; Monroe, W. T., "A planar microfluidic mixer based on logarithmic spirals" *Journal of Micromechanics and Microengineering* 2012, *22*, 055019.

57. Regmi, B. P.; Monk, J.; El-Zahab, B.; Das, S.; Hung, F.; **Hayes, D**.; Warner, I. M., "A novel composite film for detection and molecular weight determination of organic vapors" *Journal of Materials Chemistry* 2012.

58. Zanetti, A. S.; McCandless, G. T.; Chan, J. Y.; Gimble, J. M.; Hayes, D. J., "Characterization of novel akermanite:poly-ϵ-caprolactone scaffolds for human adipose-derived stem cells bone tissue engineering" *Journal of Tissue Engineering and Regenerative Medicine* **2015**, *9*, 389-404. Online November 20th, 2012.

59. Cole, M. R.; Li, M.; El-Zahab, B.; Janes, M. E.; **Hayes, D**.; Warner, I. M., Design, Synthesis, and Biological Evaluation of β-Lactam Antibiotic-Based Imidazolium- and Pyridinium-Type Ionic Liquids. *Chemical Biology & Drug Design* 2011**,** *78* (1), 33-41.

60. Qureshi, A. T.; Monroe, W. T.; Lopez, M. J.; Janes, M. E.; Dasa, V.; Park, S.; Amirsadeghi, A.; **Hayes, D. J**., Biocompatible/bioabsorbable silver nanocomposite coatings. *J. Appl. Polym. Sci.* 2011**,** *120* (5), 3042-3053.

61. Dumke, J. C.; El-Zahab, B.; Challa, S.; Das, S.; Chandler, L.; Tolocka, M.; Hayes, D. J.; Warner, I. M., "Lanthanide-Based Luminescent NanoGUMBOS" Langmuir 2010, 26, 15599-15603.

62. Fonash, S. J.; Cuiffi, J.; Hayes, D.; Nam, W.; Bae, S.; Li, H.; Kalkan, A., "Nanostructured silicon for biomedical application" *Smart Materials and MEMS* **2001**, 280-285.

63. Kalkan AK, Henry MR, Li HD, Cuiffi JD, **Hayes DJ**, Palmer C, and SJ Fonash. 2005. Biomedical/analytical applications of deposited nanostructured Si films", *Nanotechnology* 16(8): 1383-1391.

64. Zguris, J. C.; Itle, L. J.; **Hayes, D**.; Pishko, M. V., "Microreactor Microfluidic Systems with Human Microsomes and Hepatocytes for use in Metabolite Studies" Biomedical Microdevices 2005, 7, 117-125.

65. Cuiffi, J. D.; **Hayes, D. J.;** Fonash, S. J.; Brown, K. N.; Jones, A. D., "Desorption, Ionization Mass Spectrometry Using Deposited Nanostructured Silicon Films" Analytical Chemistry 2001, 73, 1292-1295.

66. Hornyak, T. J.; **Hayes, D. J**.; Chiu, L. Y.; Ziff, E. B., "Transcription factors in melanocyte development: distinct roles for Pax-3 and Mitf" *Mechanisms of Development* 2001, 101, 47-59.

67. Hornyak, T. J.; **Hayes, D. J**.; Ziff, E. B., "Cell-density-dependent regulation of expression and glycosylation of dopachrome tautomerase/tyrosinase-telated protein-2" *Journal of Investigative Dermatology* 2000, 115, 106-112.

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Book Chapters:

- Qureshi, A. T.; Chen, C.; Shah, F.; Thomas-Porch, C.; Gimble, J. M.; Hayes, D. J., "Human adipose-derived stromal/stem cell isolation, culture, and osteogenic differentiation" Methods in enzymology 2014, 538, 67-88.

Published Proceedings/Abstracts:

- "Nanotechnology in Business", **Hayes DJ,** Cuiffi JD, *Abstracts of Papers of the American Chemical Society.* 230:, U712-U712 37-CHAL (2005).
- Fonash, S.; Cuiffi, J.; **Hayes, D**.; Nam, W.; Bae, S.; Li, H.; Kalkan, A., "Nanostructured silicon for biomedical application" Proceedings of SPIE 2003, 4236, 280.

Invited Presentations:

- Invited Seminar, Applications of Inducible siRNA Delivery in Regenerative Medicine and Cancer Treatment. University of Maryland, September 2019
- Invited Seminar, Hong Kong Polytech University, November 2018
- Invited Seminar, Purdue University, March 2018
- Basic Science Panel Member iFATS, New Orleans LA, Fall 2015.
- TCL-2011, "New developments in nanotechnology for coatings and textiles: Uses, safety and regulation", Orlando Florida, Fall 2011..
- Invention 2 Venture meeting, "How to start a start-up", State College, PA, Fall 2008
- Intertech Pira, "Antimicrobials in Consumer Applications", Tampa Fl, Fall 2008
- INTC, "Nanotechnology and Protective Materials Sessions", Houston, TX, Fall 2008.
- Techtextil, "Application of Nanotechnology to Fiber and Fabrics", Atlanta GA, Spring 2008.
- INTC, "Integration Strategies of Metallic Nanoparticles for Synthetic and Non-synthetic Polymers" Fall 2007, San Francisco CA.
- Intertech PIRA, "Antimicrobials in Plastic and Textile Applications" Orlando, FLA, Fall 2007.
- HiTex, "Impact of Nanotechnology in Textile Development", Montreal, Quebec Canada, Fall 2006.

- International Nanotech Workshop, Venice, Italy, 2004.
- "Advances in Matrix Free Laser Desorption Mass Spectrometry", Pfizer, Cambridge MA, Fall 2003.

Presentations and Posters:

- Shaik S, Devireddy R, Hayes D. NextGen Sequencing of Adipose Derived Stem Cells for Therapeutic Applications. NEMB, Los Angeles CA, August 2018.
- Abu-Laban M, Kumal R, Haber L, Hayes D, Dual siRNA Delivery Using Metal Plasmonic Nanoparticles. NEMB, Los Angeles CA, August 2018.
- Liu Y, Glick A, Hayes D. Spatiotemporal Controlled Delivery of miRNA Mimics for Tumor Reduction. Materials Day, University Park PA, October 2018.
- Gombeda J, Garber L, Pojman J, Hayes D, editors. Biomedical applications of thiol-acrylate polymerization. American Chemical Society Meeting; Washington DC, Fall 2017.
- Forghani A, Abu Laban M, Chen C, , Devireddy R, Hayes D, Dual Gene Regulation By Gold And Silver Nanoparticles With Different Plasmonic Properties. TERMIS Dec 2016.
- Kriegh L, Chen C, Hayes D, editors. MiRNA Enhance Chondrogenesis and Regenerative Potential of Human Adipose Derived Stem Cells. TERMIS Dec 2016.
- John Poche, Cong Chen, Mollie Smoak, Daniel Hayes; Hybrid AdECM/Synthetic Scaffolds for Critical Sized Bone Defect Repair. iFATS, New Orleans LA, Fall 2015.
- Ammar Qureshi, Jeffery Gimble, Daniel Hayes, Tom Davis, Jonathan Forsberg; miRNA regulation of Heterotopic Ossification in skeletal muscle. iFATS, New Orleans LA, Fall 2015.
- Anoosha Forghani, Leah Garber, Cong Chen, Ram Devireddy, John A Pojman, Daniel Hayes, In Situ Polymerization of PEGDA foam for bone defects. ICEME, Houston TX, Fall 2015.
- Ammar Qureshi, Andrew Doyle, Todd Monroe, Fabio Del Piero, Vinod Dasa, Jeffery Gimble, **Daniel Hayes**, Light Activated miR-148b-Nanoparticle Conjugates Heal Critical Size Mouse Calvarial Defects, ASME-NEMB, February 2014.
- Mark Hoppens, Katie Hogan, Paul Savage, **Daniel Hayes**, Diagnostic and Antimicrobial Nanoparticle for Selective Theranostics, ASME-NEMB, February 2014.
- Mollie Smoak, Cong Chen, Leah Garber, John Pojman, **Daniel Hayes**, In Vivo Characterization Of Pentaerythritol Triacrylate-co-Trimethylolpropane Nanocomposite Scaffolds As Potential Bone Augments And Grafts, ASME-NEMB, February 2014.
- AB Doyle, AT Qureshi, **DJ Hayes**. Effect of scaffold composition on the osteogenic differentiation of human adipose stem cells with photo-activated nanoparticles; LSU Summer Undergraduate Research Forum, August 2013
- Mollie Smoak, Leah Garber, Cong Chen, Ammar Qureshi, Caleb Blackburn, John Pojman, **Daniel Hayes**. Novel Antimicrobial biocompatible PETA composite scaffolds for orthopaedic implants. Poster-2nd Stevens Conference on Bacteria-Material Interactions, June 2013
- Leah Garber, Cong Chen, John Pojman, **Daniel Hayes**. Characterization of Novel PETA: Hydroxyapatite Scaffolds for Human Adipose-derived Stem Cells Bone Tissue. ASC, New Orleans April 10th, 2013.
- Ammar Qureshi, William Monroe, Jeffrey Gimble and **Daniel Hayes**. Photo Activated Silver Nanoparticle-Micro RNA Delivery Vehicles for Osteogenic Differentiation of Human ASC. Oral Presentation. ASME-NEMB- Spring 2013
- Trevor Stubbs, Mark Hoppens, Paul Savage and **Daniel Hayes**, Hemolytic Properties of the Anti-Bacterial Compounds CSA-124 and CSA-124 Bound to Silver Nanoparticles. LSU Orthopedic Core Conference, Spring 2013.

- Ammar Qureshi, William Monroe, Jeffrey Gimble and **Daniel Hayes**. Temporal and Spatial Differentiation of Human Adipose Derived Stem Cells Using UV Radiation. Oral Presentation. ACS-SWRM Fall 2012
- Trevor Stubbs, Mark Hoppens, Paul Savage and **Daniel Hayes**, Hemolytic Properties of the Anti-Bacterial Compounds CSA-124 and CSA-124 Bound to Silver Nanoparticles. Medical Student Research Day, LSU-HSC, Summer 2012.
- Tumor-Targeting Hyperthermal Near-Infrared NanoGUMBOS. J. C. Dumke, A. Qureshi, **D.J. Hayes**, I. M. Warner. Oral Presentation. ACS-SWRM, Baton Rouge, Fall 2012
- Mark Hoppens, Ammar Qureshi, Zannan Wheeler, Paul Savage, W. T. Monroe, **Daniel Hayes.** Synthesis and Characterization of Ceragenin Functionalized Iron Core, Silver Shell Nanoparticles. ACS Southwest Regional Meeting. Baton Rouge, Fall, 2012
- Alex Cagnola, Ammar Qureshi and **Daniel Hayes**. Partially Coated Nanoparticle Delivery Vehicles for Targeted Drug Delivery. Poster LSU-SURF Summer 2012.
- Ammar Qureshi, William Monroe, Jeffrey Gimble and **Daniel Hayes**. Photo-Activated Micro-RNA Osteogenic and Angiogenic Differentiation of human ASC. Poster-ICBN Summer 2012.
- Leah Garber, Cong Chen, John Pojman, **Daniel Hayes**. Trithiol Acrylate Nanocomposite Foams for Critical Size Bone Defect Repair: A Novel Biomaterial. Oral Presentation-ACS SWRM, Baton Rouge, Fall 2012.
- Ammar Qureshi, Lekeith Terrell, William Monroe, Vinod Dasa, Marlene Janes, Jeff Gimble, **Daniel Hayes**. Antimicrobial Biocompatible Bioscaffolds for Orthopedic Applications. Poster-BMES Fall 2011.
- Ammar Qureshi, Jeffery Hobden, Paul Savage, **Daniel Hayes**. Targeted and Selective Antimicrobial Delivery System. Oral Presentation-BMES Fall 2011.
- Vinod Dasa, Jeff Hobden, Jean T Jacob, Mandi Lopez, **Hayes, Daniel**. Bioresorbable, Nanocomposite Coatings Reduce Microbial Colonization of Orthopaedic Fixation Devices. Poster, Louisiana Orthopedic Association. Spring 2011, New Orleans, LA.
- Vinod Dasa, Jeff Hobden, Jean T Jacob, Mandi Lopez, **Hayes, Daniel**. Bioresorbable, Nanocomposite Coatings Reduce Microbial Colonization of Orthopaedic Fixation Devices. Poster, ORS annual meeting. Spring 2011, Long Beach, CA.
- Ammar Qureshi and **Daniel J. Hayes**. Multi-functional Hydrogel Nanocomposite for Drug Delivery Applications. Poster- BMES Fall 2010.
- Ammar Qureshi, W. Todd Monroe, Mandi Lopez, Marlene E. Janes and **Daniel J. Hayes**. Bacterial Biofilm Reduction Using Silver Nanocomposites on Chronic Implants. Poster- Particles Spring 2010.
- **Hayes DJ**, Openshaw M, Cuiffi JD, et al., "Matrixless, High Throughput, Combinatorial Compound Library Analysis on the Axima CFR+", Poster NJACS – MSDG, Fall 2004.
- **Hayes DJ**, Openshaw M, Cuiffi JD, et al., "Rapid Compound Analysis by Matrixless Laser Desorption/Ionization" Poster ASMS, Fall 2004.
- Fan HX, **Hayes DJ** et al., "Drug Library Characterization using Matrixless MALDI", Poster ASMS, Fall 2004.
- Cuiffi JD, **Hayes DJ**, Fonash SJ, "Drug Library Analysis by Matrix Free Laser Desorption/Ionization", Poster ASMS, Fall 2003.
- **Hayes DJ,** "Microchemical Reactor Fabrication and Characterization", Presentation, Micro and Nanobiotechnology Conference, Spring 2002.
- Weston DJ, Grotz DE, Kathleen Cox A, et al., "Rapid Drug Metabolite Screening by Non-Matrix Laser Desorption and MALDI/TOF-MS", Poster ASMS, 2002.
- **Hayes DJ**, Cuiffi JD, Carter A, et al. "Analysis of the Effects of Nanostructured Thin Film Morphology and Surface Chemistry on Cell Adhesion", Poster BioMEMS, Fall 2001.
- Cuiffi JD, Fonash SJ, **Hayes DJ** "Laser Desorption Mass Spectroscopy Using Thin Film Deposited Nano-Porous Silicon", Presentation MRS, Fall 2000.
- Fonash SJ, Cuiffi JD, **Hayes DJ**, et al., "Nanostructured Silicon for Biomedical Applications, SPIE, 2000.

Professional Societies:

- Biomedical Engineering Society (2017-present)
- American Chemical Society (2010-Present)
- Tissue Engineering and Regenerative Medicine International Society (2014-Present)
- International Federation for Adipose Therapeutics and Science (2015-Present)
- American Society of Mass Spectrometry (2001-2003)

Peer Review for Scientific Journals:

Bone, Analytical Chemistry, Veterinary Surgery, Tissue Engineering A & C, Biomaterials, Journal of Applied Polymer Science, Langmuir, PLoS One, Acta Biomaterialia, Cellulose, Journal of Biomedical Materials Research A & B, Stem Cell, JOVE, Nature Protocols, BioResources, ACS Applied Materials & Interfaces, Materials, Journal of Materials Chemistry B, ACS Nano, Langmuir

Grant Reviewing:

- NSF CAREER Panel, 2013-2015
- NSF DMREF Panel, 2014
- NSF Biomedical Engineering Panel, 2016
- NSF Synthetic Biology Panel, 2017
- NIH IMST Study Section, 2016
- NIH CMT Study Section 2017-Present
- NIH Score Study Section 2018-2019
- NIH Louisiana Biomedical Research Network (LBRN), 2014-2016
- NSF SBIR Panel, 2008, 2018, 2019
- CDMRP Discovery Award Study Section 2019
- NIH SBIR Study Section, 2019-2021
- NIH Fellowship Study Section, 2020-2021

Conference Organizer:

- Organizing Committee NEBEC, University Park PA, 2020 (Postponed)
- Session Organizer: "Modulation of nanoparticle delivery" NEMB Meeting, ASME Los Angeles, CA August 2018.
- Session Chair: "Basic Science Panel", *International Federation for Adipose Therapeutics and Science*, New Orleans LA, Nov 2015.
- Session Organizer: "Biological and Inorganic Imaging", *LSU Advanced Imaging Symposium*, Baton Rouge LA, Apr 2016.
- Session Chair: "Silver Antimicrobials", *International Food Technologists Annul Meeting*, Chicago IL, July 2013.

University Service:

- College of Engineering Ombudsperson (2021-Present)
- Huck Institutes for Life Science Cabinet (2019-Present)
- Huck-BME Search Committee Chair (2019-2020)
- BIOE/BME Graduate Program Coordinator (2019-Present)
- Coordinator of BME MENG Program (2018-Present).
- Acoustics Program Search Committee (2018-2019)
- Joint Graduate School Curriculum Committee Member (2018-2019).
- Graduate Faculty Council, Engineering Representative (2017-2019).
- Engineering Faculty Council, Planning Committee Chair (2019-2020).

- Engineering Faculty Council, Chair (2018-2019).
- Engineering Faculty Council, Vice Chair (2017-2018).
- BME Faculty Search Committee Member (2016-2020).
- Graduate Admissions Committee Member BME (2016-Present).
- Shared Instrumentation Facility Reorganization Committee, Vice Chair, 2015-2016.
- College Policy Committee Secretary, 2015-2016
- IACUC Committee Member, 2015-2016
- Undergraduate Research Conference Judge LSU, 2013-2016
- Chemistry Department Graduate Research Fair Judge, 2012- 2015
- Faculty Senate Budget and Planning Advisory Committee, 2010-2012
- Biological Engineering Student Organization Faculty Rep, 2010-2016
- College of Engineering Research and Economic Development Committees, 2011-
- BAE Departmental Graduate Faculty committee, 2009-2016
- LA-STEM fellowship selection committee, 2009-2014
- BAE Department Head search committee, 2011
- LSU Musculoskeletal Research Consortium, 2009-Present
- Faculty Advisor for the Biological Engineering Student Organization (BESO) 2009-2016
- Judge at the annual Phi Zeta research competition at the School of Veterinary Medicine. 2009-2014