David W. Britt, Ph.D.

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Education

University of Utah	Chemistry / Materials Sci. & Eng.	B.S. 1992
University of Puerto Rico	Spanish minor (Advanced Proficiency)	1989 -1990
University of Utah	Bioengineering	Ph.D. 1998
Max Planck Institute for Biophysical Chemistry, Göttingen, Germany	Molecular self-assembly, ultra-microscopy. (German proficiency)	Post-Doc 1998 – 2000

Appointments

Department of Biological Eng., Utah State	Associate Professor	2008 – present
Department of Bioengineering, U. of Utah	Adjunct Faculty	2003 - present
Chem. & Materials Eng., U. Auckland, NZ	Visiting Faculty	4/2009 – 4/2010
Department of Biological Eng., Utah State	Assistant Professor	2002 – 2008
Department of Bioengineering, U. of Utah	Research Assist. Professor	2001 – 2002

Expertise: Nanoparticles, Agriculture, Interfacial Processes, Biofilms, Molecular Imprinting

Scholar Metrics (09/01/2018)

	Google Scholar	Web of Science
Total refereed publications	70	70
Citations	2,884	1,714
H-index	30	23

Press Releases Highlighting Outreach, Mentoring, and Research

- **Underrepresented minority summer outreach REU**: "Undergraduate students share research, experiences in STEM program" by Kevin Opsahl, The Herald Journal, June 30, 2017. http://news.hjnews.com/allaccess/undergraduate-students-share-research-experiences-in-stem-program/article_1ccab7e4-4c5b-5ff3-af94-8674bc5c5e48.html
- **High School Student** research through the Biotechnology Summer Academy program: https://www.usu.edu/today/index.cfm?id=52533
- **Undergraduate mentoring** and awards: http://rgs.usu.edu/blog/researchers-recognized-at-the-2011-robins-awards/
- **Nanoparticle research** highlights: https://engineering.usu.edu/news/main-feed/2017/prime-plant.pdf

International Reputation

- Plenary speaker: International Conference on Nanotechnology Applications and Implications of Agrochemicals toward Sustainable Agriculture and Food Systems. November 16-18, 2016, Beijing China.
- Invited seminar: University of Uppsala Bioengineering Program, January 20, 2015.
- External PhD reviewer: Priya Mary Abraham, Landau Koblenz, Germany, January 15-16, 2015
- Invited seminar: NanoBioPhotonics Group, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, April 29, 2013.
- Invited seminar: Department of Chemistry and Materials Science, University of Auckland, Auckland, New Zealand, February 18, 2009.
- Invited seminar: BASF AG, Surfactants Division, Ludwigshafen, Germany. June 10, 2005.

Academic Honors and Awards

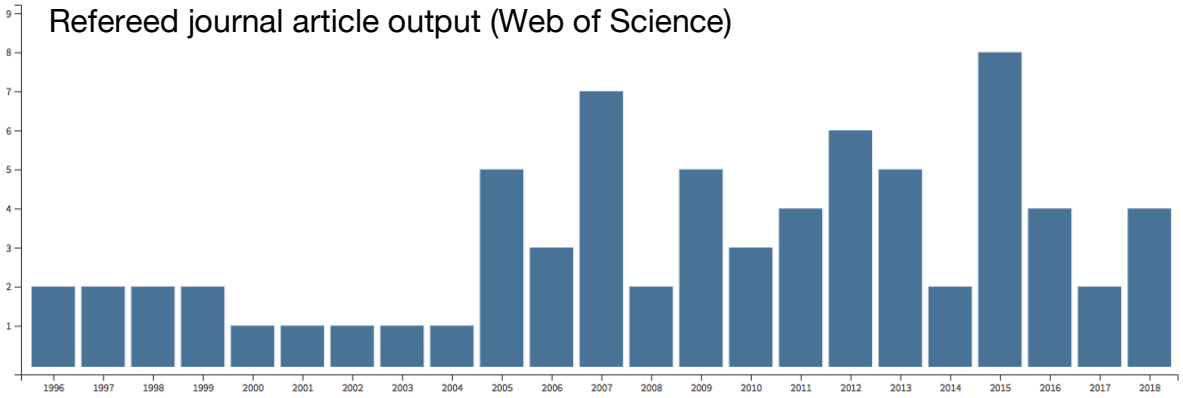
- Outstanding Teacher, Biological Engineering (2016, 2015, 2009, 2004)
    - Outstanding Teacher, College of Engineering (2015)
    - USU Eldon Gardner Teacher of the Year (2015), Recipient is selected from the outstanding teachers representing each of the eight USU colleges and recognized at the Robins Awards
- Outstanding Advisor / Research Mentor, BE (2011, 2007, 2003)
    - Outstanding Advisor, COE (2007)
    - Robins Award Finalist - Student Advising and Mentoring (2007) USU-wide competition
- Department Teaching Excellence Award, Utah State University (2007), USU-wide competition
- Outstanding Researcher, Department of Biological Engineering (2005)
- Research featured on journal covers:
    - Journal of Applied Polymer Science (vol. 132, June 5, 2015)
    - Langmuir (vol. 17, June 12, 2001)
- USDA-CSREES Young Investigator Award (2005)
- Top 25 Reviewer, Journal of Colloid and Interface Science (2005)
- Ph.D. dissertation (Alkyl-Silane Monolayers for Protein and Virus Adsorption Studies) nominated to represent the University of Utah for the 2000 Council of Graduate Schools International Distinguished Dissertation Award in the Physical Sciences, Mathematics, and Engineering
- National Science Foundation-NATO Post-Doctoral Fellow (1998 - 1999)
- Whitaker Foundation Bio-Based Engineering Fellow (1995 - 1996)
- National Institutes of Health Training Grant Fellow (1993 - 1994)

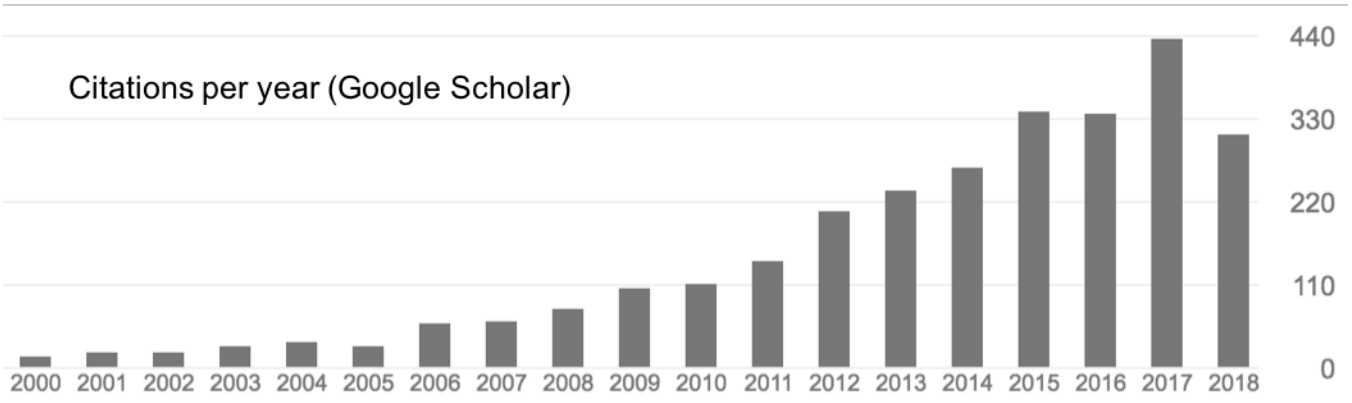
Professional / Honor Societies

- American Chemical Society, Colloids and Surfaces Division. American Society for Engineering Education. Sustainable Nanotechnology Organization
- Phi Beta Kappa Honor Society. Tau Beta Pi (current faculty advisor to the USU Gamma Chapter)

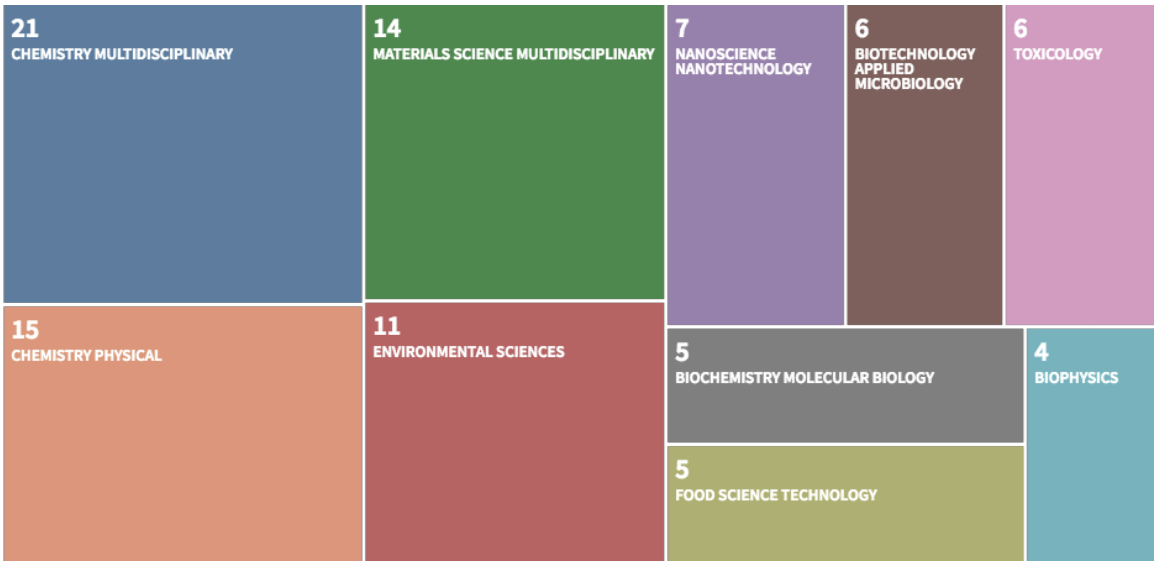
1. Research Productivity: Publications, Patents, Presentations

Refereed journal article output (Web of Science)





Publication treemap representation of journal article topics (Web of Science)



1.1. Journal Articles (1996 – present)

** indicates graduate student; §indicates undergraduate or high school student.* Hyperlinks for articles are to NCBI or publisher web sites.

1. Giasuddin*, A-B., Cartwright*, A., Jackson§, K., Britt, D.W. Hydrophobic silica nanoparticle synthesis at the air/water interface. *Sustainable Chem. Eng*. 10.1021/acssuschemeng.8b06359
2. McManus*, P., J. Hortin*, A. J. Anderson, A. R. Jacobson, D. W. Britt, J. Stewart and J. E. McLean (2018). Rhizosphere Interactions Between Copper Oxide Nanoparticles and Wheat Root Exudates in a Sand Matrix: Influences on Cu Bioavailability and Uptake. *Environmental toxicology and chemistry*. 37(10), 2619-2632.
3. Jacobson, A., Doxie§, S., Potter*, M., Adams§, J., Britt, D.W, McManus*, P., McLean, J.E, Anderson, A.J, (2018). Interactions Between a Plant Probiotic and Nanoparticles on Plant Responses Related to Drought Tolerance. *Industrial Biotechnology*, 14:3, 148-156.

4. Bonebrake*, M., Anderson*, K., Valiente§, J., Jacobson, A., McLean, J.E, Anderson, A.J, Britt, D.W. (2018). Biofilms Benefiting Plants Exposed to ZnO and CuO Nanoparticles Studied with a Root-Mimetic Hollow Fiber Membrane. *J Agric Food Chem*, 66:26, 6619–6627.
5. Zhang* J, Anderson* K, Britt, DW, Liang, Y. (2018) Sustaining biogenic methane release from Illinois coal in a fermentor for one year. *Fuel* Volume 227, 1, 27-34
6. Yang, K.-Y., S. Doxey§, J. E. McLean, D. Britt, A. Watson§, D. Al Qassy, A. Jacobson and A. J. Anderson (2017). Remodeling of root morphology by CuO and ZnO nanoparticles: effects on drought tolerance for plants colonized by a beneficial pseudomonad. *Botany* 96(3): 175-186.
7. Adams§ J, Wright§ M, Wagner§ H, Valiente§ J, Britt D, Anderson A. (2017). Cu from dissolution of CuO nanoparticles signals changes in root morphology. *Plant Physiol Biochem*. 110:108-117.
8. Anderson AJ, McLean JE, Jacobson AR, Britt DW. (2018). CuO and ZnO nanoparticles modify interkingdom cell signaling processes relevant to crop production. *J Agric Food Chem*. 66(26):6513-6524
9. Anderson A, McLean JE, McManus* P, Britt DW. (2017) Soil chemistry influences the phytotoxicity of metal oxide nanoparticles. *International J Nanotechnology*. Vol. 14, No.1/2/3/4/5/6 pp. 15 – 21
10. Heredia A, Colín-García M, Carreón-Castro* MP, Mukherjee D, Abreu B, Britt DW, Mendes, JC. (2016) Deposition of Carbon Nanotube Films on Polyamide and Polypropylene Substrates: A Computer Simulation Approach. *Materials Research*, *19*(4), 895-900.
11. Wright§ M, Adams§ J, Yang K, McManus P, Jacobson A, Gade A, McLean J, Britt D, Anderson A. (2016). A root-colonizing pseudomonad lessens stress responses in wheat imposed by CuO nanoparticles. *PLoS One*. Oct 24;11(10): e0164635. doi: 10.1371/journal.pone.0164635.
12. Gade, A.; Adams§, J.; Britt, D. W.; Shen, F. A.; McLean, J. E.; Jacobson, A.; Kim, Y. C.; Anderson, A. J., (2016) Ag nanoparticles generated using bio-reduction and -coating cause microbial killing without cell lysis. *Biometals*, *29*, (2), 211-223.
13. Goodman§, J., J. E. Mclean, D. W. Britt and A. J. Anderson (2016). Sublethal doses of ZnO nanoparticles remodel production of cell signaling metabolites in the root colonizer *Pseudomonas chlororaphis* O6. *Environmental Science: Nano* **3**(5): 1103-1113.
14. Zabrieski§, Z.; Morrell§, E.; Hortin§, J.; Dimkpa, C.; McLean, J.; Britt, D.; Anderson, A., (2015) Pesticidal activity of metal oxide nanoparticles on plant pathogenic isolates of Pythium. *Ecotoxicology*, *24*, (6), 1305-1314.
15. Watson§, J. L.; Fang§, T.; Dimkpa, C. O.; Britt, D. W.; McLean, J. E.; Jacobson, A.; Anderson, A. J., (2015) The phytotoxicity of ZnO nanoparticles on wheat varies with soil properties. *Biometals*, *28*, (1), 101-112.
16. Stewart, J.; Hansen, T.; McLean, J. E.; McManus, P.; Das, S.; Britt, D. W.; Anderson, A. J.; Dimkpa, C. O., (2015) Salts affect the interaction of ZnO or CuO nanoparticles with wheat. *Environ Toxicol Chem*, *34*, (9), 2116-2125.
17. Madsen*, B. Ho, C-H, Henrie, M., Ford, C, Stroup, E. Maltby, B., Olmstead, D, Andersen, M., Britt, D. W., Hemodialysis membrane surface chemistry as a barrier to lipopolysaccharide transfer. (2015) *J. Applied Polymer Science*. 132 (21), 41550.
18. Dimkpa, C. O., J. E. McLean, D. W. Britt and A. J. Anderson (2015). "Nano-CuO and interaction with nano-ZnO or soil bacterium provide evidence for the interference of nanoparticles in metal nutrition of plants." *Ecotoxicology* 24(1): 119-129.
19. Dimkpa, C. O., T. Hansen, J. Stewart, J. E. McLean, D. W. Britt and A. J. Anderson (2015). "ZnO nanoparticles and root colonization by a beneficial pseudomonad influence essential metal responses in bean (Phaseolus vulgaris)." *Nanotoxicology* 9(3): 271-278.
20. Watson§, J Fang§, T., Dimkpa, C. O., Britt, D. W., McLean, J. E., Jacobson, A., Anderson, A. J. (2015) The phytotoxicity of ZnO nanoparticles on wheat varies with soil properties. *Biometals*. 101-12

21. Stewart J., Hansen, T., McLean, J., Das, S., Britt, D. W., Anderson, A. Salts affect the interaction of ZnO or CuO nanoparticles with wheat. *Environmental toxicology and chemistry* **34**(9): 2116-2125.
22. Peng* Y., Turner, N., Britt, D. W. (2014). Trifluorosilane induced structural transitions in beta-lactoglobulin in sol and gel. *Colloids and Surfaces Biointerfaces*. 119:6-13.
23. Martineau§, N., McLean, J. E., Dimkpa, C. O., Britt, D. W., & Anderson, A.J. (2014). Components from wheat roots modify the bioactivity of ZnO and CuO nanoparticles in a soil bacterium. *Environ Pollut* 187, 65-72.
24. Fang§, T., Watson§, J. L., Goodman§, J., Dimkpa, C. O., Martineau§, N., Das, S., McLean, J. E., Britt, D. W., Anderson, A. J. (2013). Does doping with aluminum alter the effects of ZnO nanoparticles on the metabolism of soil pseudomonads? *Microbiol Res* 168, 91-8.
25. Dimkpa, C. O., McLean, J. E., Martineau§, N., Britt, D. W., Haverkamp, R. & Anderson, A. J. (2013). Silver Nanoparticles Disrupt Wheat (Triticum aestivum L.) Growth in a Sand Matrix. *Environmental Science & Technology* 47, 1082-1090.
26. Dimkpa, C. O., McLean, J. E., Britt, D. W. & Anderson, A. J. (2013). Antifungal activity of ZnO nanoparticles and their interactive effect with a biocontrol bacterium on growth antagonism of the plant pathogen Fusarium graminearum. *Biometals* 26, 913-924.
27. Dimkpa, C. O., Latta, D. E., McLean, J. E., Britt, D. W., Boyanov, M. I. & Anderson, A. J. (2013). Fate of CuO and ZnO Nano- and Microparticles in the Plant Environment. *Environmental Science & Technology* 47, 4734-4742.
28. Park, A., Hoyt*, D., Britt, D. W., Chase, S., Tansavatdi, K., Hunter, L., McGill, L., Sheng, X., Shu, X.Z., Prestwich, G.D., Alder, S. (2013). Crosslinked Hydrogel and Polyester Resorbable Ventilation tubes in a Chinchilla Model. *Laryngoscope*. 123(4), 1043-1048.
29. Woiterski*, L., Britt, D. W., Kas, J. A. & Selle, C. (2012). Oriented Confined Water Induced by Cationic Lipids. *Langmuir* 28, 4712-4722.
30. Dimkpa, C. O., Zeng*, J., McLean, J. E., Britt, D. W., Zhan, J. X. & Anderson, A. J. (2012). Production of Indole-3-Acetic Acid via the Indole-3-Acetamide Pathway in the Plant-Beneficial Bacterium Pseudomonas chlororaphis O6 Is Inhibited by ZnO Nanoparticles but Enhanced by CuO Nanoparticles. *Applied and Environmental Microbiology* 78, 1404-1410.
31. Dimkpa, C. O., McLean, J. E., Latta, D. E., Manangón*, E., Britt, D. W., Johnson, W. P., Boyanov, M. I. & Anderson, A. J. (2012). CuO and ZnO nanoparticles: phytotoxicity, metal speciation, and induction of oxidative stress in sand-grown wheat. Journal of Nanoparticle Research, 14(9) 1125-1135.
32. Dimkpa, C. O., McLean, J. E., Britt, D. W., Johnson, W. P., Arey, B., Lea, A. S. & Anderson, A. J. (2012). Nanospecific Inhibition of Pyoverdine Siderophore Production in Pseudomonas chlororaphis O6 by CuO Nanoparticles. *Chemical Research in Toxicology* 25, 1066-1074.
33. Dimkpa, C. O., Mclean, J. E., Britt, D. W. & Anderson, A. J. (2012). CuO and ZnO nanoparticles differently affect the secretion of fluorescent siderophores in the beneficial root colonizer, Pseudomonas chlororaphis O6. *Nanotoxicology* 6, 635-642.
34. Calder§, A. J., Dimkpa, C. O., McLean, J. E., Britt, D. W., Johnson, W. & Anderson, A. J. (2012). Soil components mitigate the antimicrobial effects of silver nanoparticles towards a beneficial soil bacterium, Pseudomonas chlororaphis O6. *Science of the Total Environment* 429, 215-222.
35. Dimkpa, J.E. McLean, D.W. Britt, and A.J. Anderson (2012). Bioactivity and Biomodification of Ag, ZnO, and CuO Nanoparticles with Relevance to Plant Performance in Agriculture. *Industrial Biotechnology* 8 (6), 344-357.
36. Saraf, L. and D. Britt (2012). "Advantages of Focused Ion Beam to Understand Redeposition, Secondary Sputtering Effects and to Create Microfluidic Structures." Microscopy and Microanalysis **18**(S2): 608-609.
37. Saraf, L. V. & Britt, D. W. (2011). Large area microcorrals and cavity formation on cantilevers using a focused ion beam. *Journal of Vacuum Science & Technology B*, *Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena* 29(5): 051603.

38. Madsen*, B., Britt, D. W., Griffiths§, F., McKenna§, E. & Ho, C. H. (2011). Effect of Sterilization Techniques on the Physicochemical Properties of Polysulfone Hollow Fibers. *Journal of Applied Polymer Science* 119, 3429-3436.
39. Dimkpa, C. O., Calder§, A., Gajjar*, P., Merugu*, S., Huang*, W. J., Britt, D. W., McLean, J. E., Johnson, W. P. & Anderson, A. J. (2011). Interaction of silver nanoparticles with an environmentally beneficial bacterium, Pseudomonas chlororaphis. *Journal of Hazardous Materials* 188, 428-435.
40. Dimkpa, C. O., Calder§, A., Britt, D. W., McLean, J. E. & Anderson, A. J. (2011). Responses of a soil bacterium, Pseudomonas chlororaphis O6 to commercial metal oxide nanoparticles compared with responses to metal ions. *Environmental Pollution* 159, 1749-1756.
41. Garg*, N., Martini, S., Britt, D. W. & Walsh, M. K. (2010). Emulsifying properties of lactose-amines in oil-in-water emulsions. *Food Research International* 43(4), 1111-1115.
42. Deshmukh*, V., Britt, D. W. & Hlady, V. (2010). Excess fibrinogen adsorption to monolayers of mixed lipids. *Colloids and Surfaces B-Biointerfaces* 81, 607-613.
43. Klem, M. T., Suci, P., Britt, D. W., Young, M. & Douglas, T. (2009). In-Plane Ordering of a Genetically Engineered Viral Protein Cage. *Journal of Adhesion* 85, 69-77.
44. Maran* U., Britt, D. W., Fox*, C.B., Harris, J.M., Orendt, A.M., Conley, H., Davis, R., Hlady, V., Stang, P.J. (2009). Self-assembly of a triangle-shaped, hexaplatinum-incorporated, supramolecular amphiphile in solution and at interfaces. *Chemistry-A European Journal*. Aug 24; 15(34):8566-77.
45. Housley§, L., Anderson§, T., Sontag§, N., Han*, S. H., Britt, D. W. & Anderson, A. J. (2009). Pluronics' influence on pseudomonad biofilm and phenazine production. *FEMS Microbiology Letters* 293, 148-153.
46. Gajjar* P., B. Pettee*, D.W. Britt, W. Huang, W.P. Johnson, A.J. Anderson (2009). Antimicrobial activities of commercial nanoparticles against an environmental soil microbe, Pseudomonas putida KT2440. *J. Biol Eng*. Jun 26;(3):9.
47. Maran*, U., Conley, H., Frank, M., Arif, A. M., Orendt, A. M., Britt, D. W., Hlady, V., Davis, R., Stang, P. J. (2008). Giant Micelles of Organoplatinum(II) Gemini Amphiphiles. *Langmuir*. 24(10); 5400-5410.
48. Henrie*, M., Ford, C., Andersen, M., Stroup, E., Diaz-Buxo, J., Madsen*, B., Britt, D. W., Ho, C.-H. (2008). In-Vitro Assessment of Dialysis Membrane as an Endotoxin Transfer Barrier – Geometry, Morphology and Permeability. *Artificial Organs*, 32(9), 701-710.
49. Turner, N. W., Wright*, B. E., Hlady, V. & Britt, D. W. (2007). Formation of protein molecular imprints within Langmuir monolayers: A quartz crystal microbalance study. *Journal of Colloid and Interface Science* 308, 71-80.
50. Turner, N. W., Liu*, X., Piletsky, S. A., Hlady, V. & Britt, D. W. (2007). Recognition of conformational changes in, beta-lactoglobulin by molecularly imprinted thin films. *Biomacromolecules* 8, 2781-2787.
51. Beck§, J., Angus§, R., Madsen*, B., Britt, D. W., Vernon, B., & Nguyen, K.T. (2007). Islet Encapsulation – Strategies to enhance islet cell functions. *Tissue Engineering* 13(3) 589-599.
52. Neville, D. O. & Britt, D. W. (2007). A problem-based learning approach to integrating foreign language into engineering. *Foreign Language Annals* 40, 226-246.
53. Liang*, Y. N., Britt, D. W., McLean, J. E., Sorensen, D. L. & Sims, R. C. (2007). Humic acid effect on pyrene degradation: finding an optimal range for pyrene solubility and mineralization enhancement. *Applied Microbiology and Biotechnology* 74, 1368-1375.
54. Child§, R., Miller, C., Liang*, Y., Narasimhan*, G., Chatterton, J., Harrison, P., Sims, R.C., Britt, D. W., & Anderson, A. J. (2007). Polycyclic aromatic hydrocarbon-degrading Mycobacterium isolates: their association with plant roots. *Applied Microbiol Biotechnol*, 75, 655-663.
55. Turner, N. W., Jeans, C. W., Brain, K. R., Allender, C. J., Hlady, V. & Britt, D. W. (2006). From 3D to 2D: A review of the molecular imprinting of proteins. *Biotechnology Progress* 22, 1474-1489.
56. Nickolov, Z. S., Britt, D. W. & Miller, J. D. (2006). Sum-frequency spectroscopy analysis of two-component Langmuir monolayers and the associated interfacial water structure. *Journal of Physical Chemistry B* 110, 15506-15513.

57. Dhruv*, H., Pepalla*, R., Taveras[§], M. & Britt, D. W. (2006). Protein insertion and patterning of PEG bearing Langmuir monolayers. *Biotechnology Progress* 22, 150-155.
58. Du, X., V. Hlady, & Britt, D. W. (2005) Langmuir Monolayer Approaches to Protein Recognition through Molecular Imprinting, *Biosensors and Bioelectronics*, 20, 2053-2060.
59. Dhruv*, H. D., Draper*, M. A. & Britt, D. W. (2005). Role of lactose in modifying gel transition temperature and morphology of self-assembled hydrogels. *Chemistry of Materials* 17, 6239-6245.
60. Anderson, A. J., Britt, D. W., Johnson[§], J., Narasimhan*, G. & Rodriguez[§], A. (2005). Physicochemical parameters influencing the formation of biofilms compared in mutant and wild-type cells of Pseudomonas chlororaphis O6. *Water Science and Technology* 52, 21-25.
61. Goodman[§], T., E. Bussmann*, C. Williams, M. Taveras[§], Britt, D. W. (2004). Electrostatic force microscopy analysis of lipid miscibility in two-component monolayers, *Langmuir*, 20, 3684-3689.
62. Britt, D. W., Goodman[§], T. & Selle, C. (2003). The influence of lipid dipole moment and interfacial water structure on protein adsorption to mixed lipid monolayers. *Materialwissenschaft Und Werkstofftechnik* 34, 1133-1137.
63. Britt, D. W., Hofmann, U. G., Mobius, D. & Hell, S. W. (2001). Influence of substrate properties on the topochemical polymerization of diacetylene monolayers. *Langmuir* 17(12), 3757-3765.
64. Britt, D. W., Mobius, D. & Hlady, V. (2000). Ferritin adsorption to multicomponent monolayers: Influence of lipid charge density, miscibility and fluidity. *Physical Chemistry Chemical Physics* 2, 4594-4599.
65. Britt, D. W. & Hlady, V. (1999). Separating octadecyltrimethoxysilane hydrolysis and condensation at the air/water interface through addition of methyl stearate. *Journal of Physical Chemistry B* 103, 2749-2754.
66. Britt, D. W. & Hlady, V. (1999). Protonation, hydrolysis, and condensation of mono- and trifunctional silanes at the air/water interface. *Langmuir* 15, 1770-1776.
67. Buijs, J., Britt, D. W. & Hlady, V. (1998). Human growth hormone adsorption kinetics and conformation on self-assembled monolayers. *Langmuir* 14, 335-341.
68. Britt, D. W., Buijs, J. & Hlady, V. (1998). Tobacco mosaic virus adsorption on self-assembled and Langmuir-Blodgett monolayers studied by TIRF and SFM. *Thin Solid Films* 327, 824-828.
69. Britt, D. W. & Hlady, V. (1997). In-situ atomic force microscope imaging of calcite etch pit morphology changes in undersaturated and 1-hydroxyethylidene-1,1-diphosphonic acid poisoned solutions. *Langmuir* 13, 1873-1876.
70. Ho, C. H., Britt, D. W. & Hlady, V. (1996). Human low density lipoprotein and human serum albumin adsorption onto model surfaces studied by total internal reflection fluorescence and scanning force microscopy. *Journal of Molecular Recognition* 9, 444-455.
71. Britt, D. W. & Hlady, V. (1996). An AFM study of the effects of silanization temperature, hydration, and annealing on the nucleation and aggregation of condensed OTS domains on mica. *Journal of Colloid and Interface Science* 178, 775-784.

1.2. Peer Reviewed Conference Proceedings. **indicates graduate student; [§]indicates undergraduate*

1. D.W. Britt., M. McConkie*, T. Taylor, Redefining a Biological Engineering undergraduate curriculum: Profits, Pitfalls, and Practicality. Oral Presentation, 113th annual ASEE conference, Chicago, IL, June 18-21, 2006. Published in the ASEE Proceedings.
2. A.J. Anderson, D.W. Britt, H. Hall[§], S. Mann[§], G. Narasimhan*. Pluronics® modify bacterial traits in a pseudomonad. IWA International Conference Biofilms 2004: Structure and Activity of Biofilms. Las Vegas, NV, October 24 – 26, 2004.
3. P. Gajjar*, B. Pettee[§], D.W. Britt, W. Huang*, W.P. Johnson, and A.J. Anderson, Antimicrobial Activity of Commercial Nanoparticles, Advanced Materials and Nanotechnology: Proceedings of the International Conference (AMN-4); University of Otago, New Zealand, Feb 8-12, 2009. doi:10.1063/1.3203218, AIP Conf. Proc. 1151, 130 (2009)

1.3. Patents **indicates graduate student*

1. Harshil Dhruv*, David W. Britt Hydrophilic Surface Modification of Polydimethylsiloxane, 8,053,548 November 8, 2011. US Patent 20100063237
2. Daniel F. Justin, Brent Stucker, David W. Britt, Durga Janaki, Ram Gabbita. Laser Based Metal Deposition (LBMD) of Antimicrobials to Implant Surfaces. 7,951,412 May 31, 2011. US Patent 20110208304

1.4. Invited Book Chapters **indicates graduate student*

1. Peng*, Y., M.K. Walsh, T. Doyle, D.W. Britt, Macromolecule imprinted polymers: antibody/receptor mimics for protein recognition and catalysis, "Biomedical Nanosensors." Pan Standford Publishing, J. Irudayaraj Ed., pp 384. November, 2012. ISBN9814303038, 9789814303033
2. Dimkpa, C.O., D.W. Britt, A.J. Anderson, Disinfection by Nanoparticles. "Nanotechnology for Environmental Decontamination." McGraw-Hill. M.K. Ram, S. Andreescu, H. Ding, Eds. May 5, 2011 ISBN = 978-0071702799, 978-0071702805
3. Dhruv*, H., N. Turner, D.W. Britt, Nanoscale Prion Detection, Encyclopedia of Agricultural, Food, and Biological Engineering. April 4, 2007. DOI: 10.1081/E-EAFE-120042375
4. Britt, D.W., G. Jogikalmath* and V. Hlady, Protein Interactions with Monolayers at the Air/Water Interface, "Biopolymers at Interfaces" 2nd Ed, M. Malmsten, Ed. M. Dekker, Inc. 415-434, 2003.
5. Hlady, V., C.-H. Ho and D.W. Britt, Quantitative Analysis of Protein Adsorption Kinetics, in "Interfacial Dynamics" N. Kallay, Ed., Surfactant Science Series, 2000, M. Dekker Inc., NY, pp. 405-418.

1.5. Invited Lectures

1. D.W. Britt, Adsorption and Entrapment of Proteins in Alkylsilane and Mixed Lipid Monolayers. Invited lecture for the "Molecules in Interaction with Interfaces" Sonderforschungsbereich seminar 294 presented at the University of Leipzig. Leipzig, Germany, April 26, 2000.
2. D.W. Britt, Influence of surface dipoles on protein adsorption to membranes. Invited lecture to the University of Utah Departments of Metallurgy and Materials Science and Engineering, March 12, 2003.
3. D.W. Britt, V. Deshmuk*, V. Hlady, Protein Interactions with Heterogeneous Surfaces. Invited lecture at the 5th International Essen Symposium on Biomaterials. Essen, Germany, October 9-11, 2002.
4. D.W. Britt, Self-Assembled Protein Arraying. Invited seminar to the Max Planck Institute for Polymer Research, Mainz, Germany. June 9, 2005.
5. D.W. Britt, Pluronic Modification of Biofilm Properties, Invited seminar to BASF AG, Ludwigshafen, Germany. June 10, 2005.
6. D.W. Britt, Molecular imprinting-based protein structure sensors for detecting prion. Invited panel lecture, Institute of Food Technologists (IFT) Annual Conference, Orlando, FL, June 24-28, 2006.
7. D.W. Britt, Bottom up Designs of Non-Fouling and Protein Selective Surfaces: Applications in Biosensors and Biomaterials. University of Arkansas, Department of Biological and Agriculture Engineering. October 17, 2007.
8. D.W. Britt, X. Liu*, N. Turner, S. Piletsky, V. Hlady, Recognition of induced conformation changes in beta-lactoglobulin via molecularly imprinted thin films, Invited presentation, Dr. Norman Scott Session Chair. 234th National American Chemical Society (ACS) Meeting, Boston, MA, August 19-24, 2007.
9. D.W. Britt Pathogenic Proteins: Nanoscale Therapeutics Developed through Surface Engineering. Department of Chemical Engineering University of Iowa, April 21, 2011.
10. D.W. Britt Design of non-fouling, antimicrobial, and toxin selective surfaces. Invited seminar, University of Auckland, Department of Chemistry, February 19, 2009.

11. D.W. Britt. Confocal Microscopy Analysis of Pseudomonads using Intrinsic Fluorophores. Invited seminar, NanoBioPhotonics Group, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, April 29, 2013.
12. D.W. Britt Protein Interactions and Induced Conformations at Engineered Interfaces. Utah State University Department of Chemistry and Biochemistry, September 19, 2014.
13. D.W. Britt Tuning Protein Secondary Structure with Hydrolyzed Fluorosilane Monomers. University of Uppsala Bioengineering Groups, and Ridgeview Instruments Inc., January 20, 2015.
14. D.W. Britt Nanotechnology for Plant Production, Discussion Leader Session, Gordon Research Conference on Nanoscale Science & Engineering for Agriculture & Food Systems June 6 – 12, 2015 at Bentley University, Waltham, Massachusetts.
15. D.W. Britt Nanoparticle Bioactivity in the Rhizosphere: Interplay of Soil Chemistry, Root Exudation, and Biofilms. International Conference on Nanotechnology Applications and Implications of Agrochemicals toward Sustainable Agriculture and Food Systems. November 16-18, 2016, Beijing China.
16. D.W. Britt Discussion Leader for Keynote Session: The Nano-Nexus in Food, Agriculture, Energy, and Water Gordon Research Conference on Nanoscale Science & Engineering for Agriculture & Food Systems June 2 – 8, 2018, Mount Holyoke University, South Hadley, Massachusetts

1.6. Scientific Presentations / Conference Abstracts

**indicates graduate student; §indicates undergraduate or high school student. Presenting author underlined.*

1. Anthony Cartwright*, Joan McLean, Anne Anderson, Astrid Jacobson, Abul Bashar Mohammad Giasuddin, Christina Morgan§, Devan Kunzler§, Jonathan Valiente§, David Britt. A novel root mimetic platform for testing the effects of SiO_2 nanoparticles on the architecture of beneficial biofilms for enhancing drought stress tolerance in wheat. Gordon Research Conference: Nanoscale Science and Engineering for Agriculture and Food. Mount Holyoke College, South Hadley, MA. June 3-8, 2018.
2. Matthew Potter*, Cindy Hanson, Elizabeth Vargis, David Britt. Bacterial Outer Membrane Vesicles: Nature's Nano. Gordon Research Conference: Nanoscale Science and Engineering for Agriculture and Food. Mount Holyoke College, South Hadley, MA. June 3-8, 2018.
3. Christina Morgan§, Anthony Cartwright*, Devan Kunzler§, David Britt. Capped nanoparticles improving controlled nutrient delivery to crops Gordon Research Seminar: Nanoscale Science and Engineering for Agriculture and Food. Mount Holyoke College, South Hadley, MA. June 2-3, 2018.
4. Kaitlyn Anderson*, David Britt. Effects of Wettability and Surface Roughness of Hollow Fiber Membranes on Bacterial Adhesion, Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.
5. Bonebrake*, M., Anderson, K., McLean, J. E., Jacobson, A., Anderson, A. J., Britt, D. W., Characterization of biofilms and metabolites in a synthetic rhizosphere. Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.
6. Eggertsen§, T., Hart§, A., Johnson§, W., Britt, D. W., Vargis, E. Synthesizing Microcarriers as a Platform for the Pharmaceutical Delivery of Quercetin for Antiviral Applications Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.
7. Giasuddin*, A. B. M., Harris*, T., Lewis, R., Britt, D. W. Aqueous synthesis of silica-spider silk nano-composite materials**.** Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.
8. Talbot, A§., Jensen§, G., Britt, D. W., Huang, Y. Morphology Engineering of ZnO Nanoparticle as Anti-microbial Fluorescent Probes. Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.
9. Jesgarz§, E., Ruben§, C., Simmons§, A., Britt, D. W**.**, Huang, Y. Development of Composite Biocompatible Tooth Opal Sealants. Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.

10. Engineering and characterization of 3D printed elastic implantable materials Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.
11. Jacobson, A., Doxey[§], S., McLean, J. E., Britt, D. W., Anderson, A. J. CuO NP effects on lignification in wheat seedlings in the presence of a a beneficial pseudomonad. Soil Science Society of America Annual Meeting, Tampa, FL. October 22-25, 2017
12. Britt, D. W., Potter*, M., Anderson, A. J., Villanueva, I., Taylor, T. A. Summer education in nano- and biological approaches to protect plants against drought stress. Sustainable Nanotechnology Organization, Los Angeles, CA. November 5-7, 2017
13. Britt, D. W., A. B. M. Giasuddin*, Self-assembly of tri-functional and di-functional alkane silanes into hydrophobic silica nanoparticles in aqueous media. Sustainable Nanotechnology Organization, Los Angeles, CA. November 5-7, 2017
14. Abul Bashar Mohammad Giasuddin*, D.W. Britt. Inhibition of amyloid fibrillation of β-lactoglobulin by hydrolyzed hydrophobic alkoxi- and fluoro-silanes. 251st American Chemical Society National Meeting & Exposition, San Diego, CA. March 13-17, 2016.
15. D.W. Britt Joshua Adams[§], Hannah Wagner[§], Joan McLean, Anne Anderson. Monitoring bacterial metabolite production and response to nanoparticles using endogenous fluorescence. 250th American Chemical Society National Meeting & Exposition, Boston, MA. August 16-20, 2015.
16. Abul Bashar Mohammad Giasuddin*, D.W. Britt. Evolution of polymeric nanoparticles formation during condensation of hydrophobic alkoxysilanes using an organic solvent free sol-gel method. Oral Presentation. 250th American Chemical Society National Meeting & Exposition, Boston, MA. August 16-20, 2015.
17. Paul E McManus*, Joseph Stewart, D.W. Britt, David K. Stevens, Anne J. Anderson, and Joan E. McLean. Rhizosphere dissolution of CuO nanoparticles by wheat root exudates in a sand matrix. Oral Presentation. 250th American Chemical Society National Meeting & Exposition, Boston, MA. August 16-20, 2015.
18. Abul Bashar Mohammad Giasuddin*, D.W. Britt.. Evolution of polymeric nanoparticle formation during hydrolysis and condensation of hydrophobic silanes in organic solvent free solution and their effect on protein fibrillation. Poster Presentation. University of Utah, October 13, 2015.
19. Melanie Wright[§], Joshua Adams[§], D.W. Britt, Anne Anderson. CuO Nanoparticles Restructure Root Morphology. Poster Presentation. Poster Presentation. NanoUtah 2015, University of Utah, October 13, 2015.
20. Abul Bashar Mohammad Giasuddin*, D.W. Britt. Turbidimetric analysis of hydrophobic alkoxysilanes hydrolysis an d condensation kinetics. Poster. Commercialization of Micro- and Nanosystems (COMS) / NanoUtah Conference, Grand America Hotel, Salt Lake City, October 12-15, 2014.
21. Kyle Isaacson[§], Rachael Mansel[§], Sean Bedingfield[§], D.W. Britt. Advancements in Time-Dependent Stability of PEG-Silanized ZnO NPs in Nanomedicine Applications. Poster. Commercialization of Micro- and Nanosystems (COMS) / NanoUtah Conference, Grand America Hotel, Salt Lake City, October 12-15, 2014.
22. Joshua Adams[§], Aniket Gade, D.W. Britt, Anne J Anderson. Green-Synthesized Silver Nanoparticles Increase Oxidative Stress in Bacteria. Poster – awarded 2nd place in the "Advances in Medicine and Healthcare". Commercialization of Micro- and Nanosystems (COMS) / NanoUtah Conference, Grand America Hotel, Salt Lake City, October 12-15, 2014.
23. O. Fidan*, D.W. Britt, L. Liu, Vapor phase deposition of alkyl- and fluoro-silanes on nanoporous glass. Poster Presentation. ACS 88th Colloid and Surface Science Symposium. U. Penn, June 22 – 25, 2014.
24. D.W. Britt, C. O. Dimkpa, J. E. McLean, N. Martineau[§], R. Haverkamp, A. J. Anderson, Silver nanoparticle uptake and growth inhibition in wheat. Oral Presentation. ACS 88th Colloid and Surface Science Symposium. U. Penn, June 22 – 25, 2014.
25. D.W. Britt, Y. Peng*, N. Turner, A.B.M. Giasuddin*. Trifluorosilane induced structural transitions in proteins in sol and gel. Oral Presentation. ACS 88th Colloid and Surface Science Symposium. U. Penn, June 22 – 25, 2014.

26. S.K. Bedingfield[§], K. Isaacson[§], R. Mansell[§], T. Robins[§], D.W. Britt. Vapor-phase Deposition and Silane Functionality to Address Issues in Silane Capping of ZnO Nanoparticles for Use in Neurological Disorder Treatment, 2014 19th Annual Conference Institute of Biological Engineering, Lexington, KY, March 6 – 8, 2014
27. S.K. Bedingfield[§], D.W. Britt, Vapor-phase Deposition and Silane Functionality to Address Issues in Silane Capping of ZnO Nanoparticles for Use in Neurological Disorder Treatment, Utah Conference on Undergraduate Research (UCUR) Brigham Young University, February 28, 2014.
28. D.W. Britt, C. O. Dimkpa, J. E. McLean, N. Martineau[§], R. Haverkamp, A. J. Anderson, Silver nanoparticle uptake and growth inhibition in wheat. International Workshop on Nanoparticles in Soils and Waters: Fate, Transport and Effects, University Koblenz-Landau, March 11–13, 2014.
29. D.W. Britt, C. O. Dimkpa, J. E. McLean, D. Latta, M. Boyanov, A. J. Anderson, Fate of CuO and ZnO Nano- and Micro-Particles in the Plant Environment. International Workshop on Nanoparticles in Soils and Waters: Fate, Transport and Effects, University Koblenz-Landau, March 11–13, 2014.
30. K.J. Isaacson[§], B. Smith[§], R. Johnson[§], S.K. Bedingfield[§], A.P. Hart[§], J. Israelsen[§], D.W. Britt, A. Anderson, J. McLean, Advancements in zinc ion delivery from PEG-silanized ZnO nanoparticles for use in neurological disorder treatment. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013 (Awarded Second Place in Student Poster Competition)
31. A.B.M. Giasuddin*, A.J. Anderson, J. McLean, C.O. Dimkpa, D.W. Britt, Dissolution of ZnO nanoparticles in wheat plant root exudates solution. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013
32. O. Fidan*, D.W. Britt, L. Liu, Controlled porous glass beads in nanofluidics systems for the purpose of energy absorption. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013
33. S.K. Bedingfield[§], K.J. Isaacson[§], R. Johnson[§], D.W. Britt, Vapor-phase deposition and silane functionality to address issues in silane capping of ZnO nanoparticles. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013
34. R. Johnson[§], K.J. Isaacson[§], D.W. Britt, J.E. McLean, A.J. Anderson, Examination of the synthesis and purity of zinc oxide nanoparticles. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013
35. B. Smith[§], A. Tucker[§], J. Murphy[§], S. Houston[§], A.J. Anderson, D.W. Britt, Increasing efficacy of antibiotics by their combination with Pluronics and quaternary ammonium surfactants. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013
36. Z. Zabriskie[§], A.J. Anderson, C.O. Dimkpa, D.W. Britt, Inhibition of growth of the plant pathogens Pythium aphanidermatum and Pythium ultimum by CuO and ZnO nanoparticles. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013 (Awarded Second Place in Student Poster Competition)
37. S. Ban[§], R. Lewis, D.W. Britt, Synthesis and characterization of spider silk microparticles as drug delivery vehicles. Poster Presentation. NanoUtah2013. 10th Annual Nanotechnology Conference, University of Utah, October 18, 2013
38. J. Goodman[§], C. Dimkpa, J. McLean D.W. Britt, A. Anderson. Nanospecific inhibition of secondary metabolism in the soil microbe and plant colonist, *Pseudomonas chlororaphis O6*. NanoUtah2012. 8th Annual Nanotechnology Conference, The Leonardo, Salt Lake City, UT. October 11-12, 2012
39. K. J. Isaacson[§], R. Johnson[§], A. Morris[§], D.W. Britt, A. Anderson, J. McLean. PEG-Silane surface modification of zinc-oxide nanoparticles for delivery of zinc ions to aid in neurodegenerative disorder treatment. Oral Presentation. NanoUtah2012. 8th Annual Nanotechnology Conference, The Leonardo, Salt Lake City, UT. October 11-12, 2012
40. A.P. Hart[§], J.K. Israelsen[§], D.W. Britt, The effect of zinc oxide nanoparticles on amyloid formation in hen egg white lysozyme. Poster Presentation. NanoUtah2012. 8th Annual Nanotechnology Conference, The

Leonardo, Salt Lake City, UT. October 11-12, 2012 (Awarded Second Place in Student Poster Competition)

41. R. Johnson[§], K. J. Isaacson[§], A. Morris[§], D.W. Britt, J. McLean, A. Anderson. Characterization and size-dependent fluorescence shift of synthesized zinc oxide nanoparticles. NanoUtah2012. 8th Annual Nanotechnology Conference, The Leonardo, Salt Lake City, UT. October 11-12, 2012.

42. S.W. Hansen[§], D.W. Britt, 10,10'-Substituted-9,9'-biacridinium as an oxidation probe. NanoUtah2012. 8th Annual Nanotechnology Conference, The Leonardo, Salt Lake City, UT. October 11-12, 2012

43. D.W. Britt, C.O. Dimkpa, J.E. McLean, A.J. Anderson, E. Manangón*, W.P. Johnson , B.W. Arey, A.S. Lea. Nanoparticle Regulation of Metabolic Pathways in Bacteria. Poster presentation. Colloids and Nanomedicine. Amsterdam, The Netherlands. July 15-17, 2012.

44. Y. Peng*, N. Turner, M.K. Walsh, V. Hlady, D.W. Britt Protein Encapsulation in Fluoro- and Alkyl-Silane Sol-Gels: Enzyme Activity, Structural Transitions and Stabilized States in the Sol and Gel. Oral Presentation, Colloids and Nanomedicine. Amsterdam, The Netherlands. July 15-17, 2012 (one of 11 oral presentations selected from 620 submissions)

45. C.O. Dimkpa, D.W. Britt, J.E. McLean, A.J Anderson. CuO and ZnO nanoparticles affect production by a beneficial pseudomonad of metabolites important in plant performance. 242nd ACS National Meeting, Denver, Colorado, August 28 – September 1, 2011

46. T. Dewey[§], M.F. Bonilla[§], C.O. Dimkpa, A.J. Anderson D.W. Britt. Biomineralization of ZnO Nanoparticles. The 7th Annual Utah Statewide Nanotechnology Conference, Poster and Oral presentations, Salt Lake City, Utah, USA. Oct. 13-14, 2011.

47. J. Goodman[§], C.O. Dimkpa, T. Dewey[§], D.W. Britt, A.J. Anderson. Do sub-lethal levels of nanoparticles affect the production of antibiotic phenazines by *Pseudomonas chloroaphis* O6? The 7th Annual Utah Statewide Nanotechnology Conference, Poster and Oral presentations, Salt Lake City, Utah, USA. Oct. 13-14, 2011

48. T. Dewey[§], M.F. Bonilla[§], C.O. Dimkpa, A.J. Anderson D.W. Britt. Bacterially-Induced Biomineralization of ZnO Nanoparticles. The Seventh Annual Utah Biomedical Engineering Conference, University of Utah. Sept 10, 2011.

49. D.W. Britt, D. Hoyt[§], A.J. Anderson, J. Shephard*, J. McQuillan, P. Bremer, G. Waterhouse. Composite Nanoparticle-Hydrogels Exhibiting Potent Antimicrobial Activity Poster Presentation, Fifth International Conference on Advanced Materials and Nanotechnology (AMN-5), Wellington, New Zealand, February 7-11, 2011.

50. D.W. Britt, Y. Peng*, N. Turner. Fluorosilane Induced Protein Conformational Shifts. Oral Presentation, Fifth International Conference on Advanced Materials and Nanotechnology (AMN-5), Wellington, New Zealand, February 7-11, 2011.

51. C. Dimkpa, D.W. Britt, A.J. Anderson. Impact of metallic nanoparticles on growth and secondary metabolism of a plant-beneficial pseudomonad (Pseudomonas chlororaphis O6). The 6th Annual Utah Statewide Nanotechnology Conference, Poster and Oral presentations, Salt Lake City, Utah, USA. Oct., 14-15, 2010.

52. Y. Peng*, M.K. Walsh, D.W. Britt. Trifulorosilane Induced Unfolding of Bovine Carbonic Anhydrase. MIP2010: The 6th International Conference on Molecular Imprinting, Poster presentation, New Orleans, August 9-12, 2010.

53. Y. Peng*, D.W. Britt. Fluoro-silane as functional monomer for "artificial chaperone" protein conformational imprinting. MIP2010: The 6th International Conference on Molecular Imprinting, Oral presentation, New Orleans, August 9-12, 2010.

54. A.J. Anderson, C. Dimkpa, J.E. McLean, D.W. Britt, William Johnson, Nanoparticle (NP) impact on plants and plant-associated microbe. Recent Developments in Food-related Nanotechnology: 239th ACS National Meeting & Exposition, Oral presentation, San Francisco, California, March 21-25, 2010.

55. A. Calder-Anderson[§], C. Dimkpa, J. McLean, D.W. Britt, A.J. Anderson, Nanoparticles and the Environment, 24th National Conference on Undergraduate Research, Oral Presentation, Montana State, April 15-17, 2010.

56. Y. Peng*, H. Dhruv*, D.W. Britt, Hydrophobic modification of silica gel toward inducing conformation transitions of encapsulated beta-lactoglobulin. Oral Presentation. 237th ACS National Meeting, Salt Lake City, Utah, March 22-26, 2009.

57. A.J. Anderson, P. Gajjar*, D.W. Britt, W. Huang*, W.P. Johnson, Metal-containing nanoparticles: Effects on a beneficial soil pseudomonad. Oral Presentation. 237th ACS National Meeting, Salt Lake City, Utah, March 22-26, 2009.

58. A.J. Anderson, P. Gajjar*, W. Huang*, Johnson, W.P., D.W. Britt, Antimicrobial activities of commercial nanoparticles against an environmental soil microbe, Pseudomonas putida KT2440. Oral Presentation, Advanced Materials and Fourth Conference on Nanotechnology (AMN-4), University of Otago Dunedin, New Zealand, February 8-12, 2009.

59. J.E. McLean, C. Dimkpa, P. Gajjar*, D.W. Britt, A.J. Anderson W. Huang*, and W.P. Johnson, Toxicity Response of a Beneficial Soil Bacterium Used As a Biosensor to Nanoparticles of Silver and Copper and Zinc Oxides. Poster presentation. Annual Soil Science Society Meeting, Pittsburgh, Nov. 2-5, 2009.

60. C. Dimkpa, P. Gajjar*, J. McLean, D.W. Britt, A.J. Anderson "Metallic Nanoparticle Interactions with Environmentally Beneficial Pseudomonads". Poster Presentation—awarded Second Place. 5th Annual Utah Statewide Nanotechnology Conference. Devices & Sensors· Energy· Medicine· Materials & Characterization. Salt Lake City · Oct 15-16, 2009.

61. K. Tansavatdi, D Hoyt*, A Park, G.D. Prestwich, L. Hunter, X. Shu, Britt, D.W, S. Chase, Hydrogel and polyester ventilation tubes in an animal model. Otolaryngology-Head and Neck Surgery, Vol 139, No 2S1, P106, August 2008.

62. P. Gajjar*, W.P. Johnson, W. Huang, A. Anderson, D.W. Britt. Engineered nanoparticles in the environment, Poster Presentation. Fourth Annual Mountain West Biomedical Engineering Conference, The Canyons, Utah, Sept 5-6, 2008.

63. Y. Peng*, H. Dhruv*, D.W. Britt. Conformation imprinting of bovine serum albumin in fluoroalkyl modified silica sol-gels. Poster Presentation. Fourth Annual Mountain West Biomedical Engineering Conference, The Canyons, Utah, Sept 5-6, 2008.

64. A. Dixon[§], A. Heredia, R. Israelsen[§], D. Odell[§], D.W. Britt. PEG Silane Modification of PDMS for Improved Hydrophilicity. Poster Presentation. Fourth Annual Mountain West Biomedical Engineering Conference, The Canyons, Utah, Sept 5-6, 2008.

65. D.W. Britt, H. Dhruv*, Y. Peng*. Conformational imprinting of bovine serum albumin in fluorine-modified sol-gels, Poster Presentation. Institute of Food Technologists (IFT) 2008 Annual Meeting, June 28 – July 1, New Orleans.

66. N. Garg*, M. Walsh, S. Martini, D.W. Britt, Emulsifying properties of lactose-amines, Poster Presentation. Institute of Food Technologists (IFT) 2008 Annual Meeting, June 28 – July 1, New Orleans.

67. L. Housley[§], T. Anderson[§], S. Han*, A. Anderson, D.W. Britt. The Influence of Pluronics® on a Pseudomonad as Illustrated by Biofilm and Phenazine Production. Poster presentation. Annual Meeting of Institute of Biological Engineering, Chapel Hill, NC, March 6-9, 2008.

68. T. Anderson[§], N. Etherington[§], L. Housley[§], D. Hoyt[§], A. Park, A. Anderson, D.W. Britt. Development of Polylactic Acid Gels as Resorbable Implant Materials Having Intrinsic Antibacterial Properties: Silver Release Profile from a Polymer Matrix. Poster presentation. Annual Meeting of Institute of Biological Engineering, Chapel Hill, NC, March 6-9, 2008.

69. B. Clyde[§], N. Hansen[§], B. Stucker, A. Anderson, D.W. Britt, Use of laser enhanced net shaping (LENS) for titatnium and silver integration to improve antimicrobial properties in medical implants. Poster presentation. Annual Meeting of Institute of Biological Engineering, Chapel Hill, NC, March 6-9, 2008.

70. N. Turner, X. Liu*, S. Piltesky, V. Hlady, D.W. Britt. Recognition of Conformational Changes in Beta-Lactoglobulin by Molecularly Imprinted Thin Films. Oral presentation. Tenth World Congress on Biosensors, Shanghai, China, May 14-16, 2008.

71. P. Gajjar*, S. Parker, B. Pettee, C. Miller, A. Anderson, D. Hoyt§, N. Etherington§, D.W. Britt. Effect of silver and copper oxide nanoparticles on root-colonizing bacteria and plant growth. Poster Presentation. nanoUtah Conference, October 26, 2007, University of Utah.

72. A. Heredia, A. Burbank§, A. Taggart§, H. Dhruv*, D.W. Britt. Controlling surface density of protein-repellent PEG films on polymers through mechanically assisted assembly. Poster Presentation. 3rd Annual Mountain West Biomedical Engineering Conference, Park City, Utah Sept 21-22, 2007

73. L. Housley§, T. Anderson§, S. Han, D.W. Britt, A. Anderson. The Influence of Pluronics® on a Pseudomonad as Illustrated by Biofilm and Phenazine Production. Poster Presentation. 3rd Annual Mountain West Biomedical Engineering Conference, Park City, Utah, Sept 21-22, 2007.

74. N. Etherington§, D. Hoyt§, D.W. Britt, A. Anderson, A. Park, G. Prestwich. In-Vitro and In-Vivo Studies of Resorbable Middle Ear Ventilation Tubes Containing Silver Antimicrobials. Poster Presentation. Third Annual Mountain West Biomedical Engineering Conference, Canyons, Utah, Sept 21-22, 2007.

75. H. Dhruv*, B. Wright, V. Hlady, and D.W. Britt. Protein Patterning of Multicomponent PEG Bearing Langmuir Monolayers: Influence of Lipid Miscibility, Phase Behavior and PEG Chain Length. Poster Presentation. 3rd Annual Mountain West Biomedical Engineering Conference, Park City, Utah, September 21-22, 2007.

76. N. W., Turner, H. Dhruv*, B. E. Wright, V. Hlady, and D.W. Britt. Structure-Function Relationships in Protein-Imprinted Langmuir Monolayers. Poster Presentation. Biomedical Engineering Society (BMES) 2007 Annual Fall Meeting, Los Angeles, California, September 26-29, 2007.

77. V. Deshmuk*, D.W. Britt, V. Hlady. Fibrinogen binding to mixed lipid monolayers Poster Presentation. Biomedical Engineering Society (BMES) 2007 Annual Fall Meeting, Los Angeles, California, September 26-29, 2007.

78. N. Etherington*, D. Hoyt§, D.W. Britt, A. Anderson, A. Park, G. Prestwich. Development of Resorbable Middle Ear Ventilation Tubes Containing Silver Antimicrobials. Poster Presentation. Biomedical Engineering Society (BMES) 2007 Annual Fall Meeting, Los Angeles, California, Sept 26-29, 2007.

79. B. Madsen*, D. Britt, C-H. Ho, M. Henrie*, C. Ford, E. W. Stroup, B. Maltby, D. Olmstead, and M. Andersen Hemodialysis Membrane Surface Chemistry as a Barrier to Endotoxin Transfer. Oral Presentation. ASAIO 53rd Annual Conference, Chicago, IL, June 7-9, 2007.

80. D. Hoyt§, N. Etherington§, D.W. Britt, A. Anderson, G. Prestwich. Development of Hyaluronan Hydrogels as Resorbable Implant Materials with Antimicrobial Activity. Poster presentation at the Annual Meeting of Institute of Biological Engineering, St. Louis, MO, March 29 - April 1, 2007.

81. M. Henrie*, C.-H. Ho, Eric Stroup, B. Maltby, D. Olmstead, M. Andersen, C., D.W. Britt, B. Madsen Hemodialysis Membrane as a Barrier to Endotoxin Transfer. 27th Annual Dialysis Conference, Colorado Convention Center. Denver, Colorado. February 18-20, 2007.

82. C.-H. Ho, M. Henrie*, C. Ford, E. Stroup, B. Maltby, D. Olmstead, M. Andersen, D.W. Britt, B. Madsen, Hemodialysis Membrane Geometry as a Barrier to Endotoxin Transfer. Poster Presentation. American Society of Nephrology 39th Annual Meeting and Scientific Exposition, San Diego Convention Center, San Diego, CA, November 14 – November 19, 2006.

83. N. Etherington§, D. Hoyt§, D.W. Britt, A. Anderson, B. Wright, D. Horton, A. Park, A. Skardal*, G. Prestwich. Antimicrobial Activity of Silver-Loaded Hyaluronic Acid Derivative (Carbylan) Middle Ear Ventilation Tubes. Poster Presentation. Second Annual Mountain West Biomedical Engineering Conference, Snowbird, Utah, Sept 15-16, 2006.

84. N. Turner, B. E. Wright, H. Dhruv*, V. Hlady, D.W. Britt, Protein Imprinting in Langmuir Monolayers, Oral Presentation, Fourth International Workshop on Molecularly Imprinted Polymers, Cardiff, UK, September 10-14, 2006.

85. N. Turner, N., X. Liu*, M. Kay, V. Hlady, S. Piletsky, D.W. Britt, recognition of induced conformation changes in b-lactoglobulin via molecularly imprinted thin films, poster, Fourth International Workshop on Molecularly Imprinted Polymers, Cardiff, UK, September 10-14, 2006.

86. N. Turner, B. E. Wright, H. Dhruv, V. Hlady, D.W. Britt, Protein Imprinting in Langmuir Monolayers, Oral Presentation, Biosensors 2006, Toronto, Canada, May 10-12, 2006.

87. G. Narasimhan*, A. Tyler§, L. Robinson§, F. Purser§, A. J. Anderson, D.W. Britt. Effect of Pluronics® on growth and virulence factor production of Pseudomonad biofilms. Poster presentation. Annual Meeting of the Institute of Biological Engineering, Tucson, AZ, March 10-12, 2006.

88. D. Hoyt§, N. Etherington§, Y. Yang, D. Gabbita, B. Stucker, D.W. Britt, Titanium Modification For Sustained, Targeted Antimicrobial Activity. Poster presentation at the Annual Meeting of Institute of Biological Engineering, Tucson, AZ, March 10-12, 2006.

89. H. Dhruv*, D.W. Britt, Building protein-specific binding pockets in PEG bearing Langmuir monolayers through controlled lipid de-mixing. Poster presentation at Annual Meeting of Institute of Biological Engineering, Tucson, AZ, March 10-12, 2006.

90. T. Taylor, D.W. Britt, M. McConkie*, P. Schreuders, and R. Sims, One Model of Biological Engineering Education at a Land Grant University Based on Directed Evolution, Invited oral presentation at Annual Meeting of Institute of Biological Engineering, Tucson, AZ, March 10-12, 2006.

91. R. Angus§, J. Beck§, B. Vernon, D.W. Britt, K.T. Nguyen, Enhanced Adhesion of Insulin Secreting Cell Lines to Polysulfone Membranes using Collagen IV Proteins. Posters on the Hill, Salt Lake City, January 2006.

92. B.K. Stevens§, B. Stucker, L. Li, D.W. Britt, and K.T. Nguyen. Strategies to enhance the bone-bonding of metal orthopedic implants. Annual meeting of the Society for Biomedical engineering and Bioengineering (BMES), Baltimore, Maryland, 2005.

93. R. Angus§, J. Beck§, B. Vernon, D.W. Britt, and K.T. Nguyen, Strategies to enhance Adhesion of Insulin Secreting Cell Lines to Polysulfone. First Annual Mountain West Biomedical Engineering Conference, Snowbird, Utah, Sept 16-17, 2005.

94. B. Madsen*, F. Griffiths§, D.W. Britt, C. Ford, and D. Thomas, Validation of a flat-sheet model of hydrophilic, semipermeable membranes. First Annual Mountain West Biomedical Engineering Conference, Snowbird, Utah, Sept 16-17, 2005.

95. G. Narasimhan*, D.W. Britt, G. N. Hodgkinson*, and V. Hlady. Digital pulsed force mode adhesion mapping of biological samples, First Annual Mountain West Biomedical Engineering Conference, Snowbird, Utah, Sept 16-17, 2005.

96. B.K. Stevens§, Y. Yang, B. Stucker, L. Li, D.W. Britt, and K.T. Nguyen. Strategies to enhance the bone-bonding of metal orthopedic implants. First Annual Mountain West Biomedical Engineering Conference, Snowbird, Utah, Sept 16-17, 2005.

97. D.W. Britt, R. Pepalla*. Study of protein (ferritin) binding kinetics onto PEGylated Langmuir monolayers. 230th ACS National Meeting - Washington, DC. August 28 - September 1, 2005.

98. J.A. Beck§, B. Vernon, D.W. Britt, K.T Nguyen, Encapsulation of Islet cells for diabetes treatment, Posters on the Hill, Salt Lake City, Utah, April 2005.

99. T. Taylor, K. Nguyen, M. McConkie*, D.W. Britt, Redefining Biological Engineering. American Society of Engineering Education: Advances in Engineering and Technology Education, Rocky Mountain Section, Utah State University, Logan, Utah. April 15-16, 2005.

100. G. Narasimhan*, J. Johnson§, A. Rodriguez§, A. J. Anderson, and D.W. Britt. Adhesion mapping of wild type and quorum sensing mutants of bacteria pseudomonas chlororaphis O6. 229th ACS National Meeting, San Diego, March 13-17, 2005.

101. R. Pepalla*, M. Taveras*, D.W. Britt. Protein Insertion and Patterning of PEG-Bearing Langmuir Monolayers. Annual Meeting of Institute of Biological Engineering, Athens, GA, March 4-6, 2005.

102. M. Taveras*, S. Stolpe§, D.W. Britt. Development of a Microcantilever Sensor Array. Institute of Biological Engineering (IBE) Conference, Athens, Ga, March 4 – 6, 2005. (2nd place awarded to poster).

103. H. Dhruv*, M. Draper*, D.W. Britt, Assembly of Mesoporous Structures as Biomolecule Detection Platforms. Institute of Biological Engineering (IBE) Conference, Athens, Ga, March 4 – 6, 2005.

104. H. Dhruv*, M. Draper*, D.W. Britt. Self-Assembly Approaches to Organogel Construction. Materials Research Society Fall Meeting, Boston, MA, Nov 29 – Dec 3, 2004.
105. A.J. Anderson, D.W. Britt, J. Johnson§, G. Narasimhan*. Physicochemical parameters influencing the formation of biofilms compared in mutant and wild type cells of Pseudomonas chlororaphis O6. IWA International Conference Biofilms 2004: Structure and Activity of Biofilms. Las Vegas, NV, October 24 – 26, 2004.
106. Z.S. Nickolov, D.W. Britt, J.D. Miller. Sum-Frequency Spectroscopic Study of the Stearic Acid Monolayer – Water Interface. 78th American Chemical Society Colloid and Surface Science Symposium, Yale University, New Haven, CT, June 20 – 23, 2004.
107. Britt, D.W., E. Bussmann*, C. Williams. Surfactant Miscibility Analysis with Electrostatic Force Microscopy. 78th American Chemical Society Colloid and Surface Science Symposium, Yale University, New Haven, CT, June 20 – 23, 2004.
108. G. Narasimhan*, J. Johnson§, B. Esplin§, A.J. Anderson, and D.W. Britt. Atomic Force Microscopy Adhesion Mapping of Bacterial Biofilms. American Association for the Advancement of Science (Pacific Division) Conference, Utah State University, June 13-17, 2004.
109. H. Hall§, S. Mann§, B. Esplin§, A.J. Anderson, and D.W. Britt. Influence of Pluronics on Planktonic and Biofilm Growth of a Soil Bacterium. American Association for the Advancement of Science (Pacific Division) Conference, Utah State University, June 13-17, 2004.
110. Z.S. Nickolov, J. Miller, V. Hlady, H. Patel, D.W. Britt, Two-Dimensional Sol-Gel Molecular Imprinting for Protein Recognition, The Eighth World Congress on Biosensors, Granada, Spain, May 24-26, 2004.
111. H. Dhruv*, D.W. Britt, Water Contact Angle and Atomic Force Microscopy Analysis of Caseinate Thin Films, Poster, 2004 Proceedings of the Institute of Biological Engineering, Fayetteville, Arkansas, January 8-10, 2004.
112. Y. Liang*, C. Miller, D.W. Britt, R. Sims, Effect of Humic Acid on Pyrene Degradation, Posters on the Hill, Salt Lake City, Utah, October 6, 2003.
113. Z.S. Nickolov, J. D. Miller, D.W. Britt, Studies of Mixed Surfactant Monolayers at Interfaces by Sum Frequency Spectroscopy, XXXIII Colloquium Spectroscopicum Internationale, Granada, Spain, September 7-12, 2003.
114. C. Fox§, D.W. Britt, Pluronic Adsorption, Distribution and Stability. 17th National Conference on Undergraduate Research, University of Utah, March 13-15, 2003.
115. Hlady, V., D.W. Britt, G. Jogikalmath, Protein Adsorption at the Air / Water Interface. Presented at the 223rd National American Chemical Society Meeting. Orlando, FL, April 7-11, 2002.
116. D.W. Britt, C. Selle, M. Lösche, S. Hell and D. Möbius, Lipid miscibility and excess surface potentials in mixed monolayers of cationic and neutral lipids. Presented at the University of Washington 5th Summer Symposium, Seattle, Washington, Aug. 19-21, 2001.
117. D.W. Britt, V. Hlady and D. Möbius, Influence of Monolayer Charge Density on Ferritin Adsorption Kinetics. Presented at the Interactions of Biopolymers with Model Membranes International Bunsen Discussion Meeting. Halle, Germany, March 26-29, 2000.
118. D.W. Britt, and V. Hlady, Virus Adsorption on Self-Assembled and Langmuir-Blodgett Monolayers. Presented at the Eighth International Conference on Organized Molecular Films. Asilomar, CA, August 1997.
119. D.W. Britt, Jos Buijs, and V. Hlady, Virus Adsorption at Self-Assembled Monolayer and Model Lipid Interfaces. Presented at the 213th National Meeting of the American Chemical Society. San Francisco, CA, April 26-29, 1997.

2. Research Funding as PI or Co-PI. $4,059,197. Total

	External	Internal	Equipment	Total

As PI	$2,129,090	$130,398	$71,135	$2,330,623
As Co-PI	$599,915	$70,000	$1,058,659	$1,728,574
Total	$2,729,005	$200,398	$1,129,794	**$4,059,197**

2.1. Current Funding

1. USU AES / VPR: LI-COR 6800 Portable Photosynthesis Instrument. Britt, David W.(PI), Jacobson, Astrid (CoPI), (July 1, 2017 - June 30, 2021). **$66,135**.
2. NSF-CBET: CuO NP bioactivity in the wheat rhizosphere: Interplay of soil chemistry, root exudation and biofilms. Britt, David W. (Principal), Anderson, Anne J. (Co-Principal), Jacobson, Astrid (Co-Principal), McLean, Joan E (Co-Principal). (August 1, 2017 - July 31, 2020). **$308,163**.
3. USDA-NIFA: Nanoparticles prime crop defenses for abiotic stress Britt, David W. (Principal), Anderson, Anne J. (Co-Principal), Jacobson, Astrid (Co-Principal), McLean, Joan E (Co-Principal), "," Sponsored by, Utah State University, (June 1, 2017 - May 31, 2020). **$450,200**.
4. USDA-NIFA Conference Support. 2018 Gordon Research Conference – Nanoscale Science and Engineering for Agriculture and Food Systems. David W. Britt, (P.I.). (May 1, 2018 - October 1, 2018). **$50,000**.
5. Industry sponsored: Polymeric biomaterial characterization and applications. (January 1, 2018 – December 31, 2018) **$28,480**.

2.2. Prior Funding

6. NSF-CBET: Effects of Metals from Flue Gas on Microalgae Biofuels and Co-products: Sustainability and Scalability Britt, David W. (PI Utah State), Wood, Byard D (Co-PI Utah State), Quinn, Jason (PI CSU Subcontract, former PI USU). $335,081. (September 1, 2013 - August 31, 2018) – Former USU PI left for CSU, D. Britt assumed PI role and created a Pilot REU Program in Biological Engineering at USU (05/17 – 08/18), results were used to submit a 2017 proposal to NSF for a 3-year REU Site (Scored E, VG, G) (revised and resubmitted in 2018) **$143,662**.
7. USU RC: Polymer Encapsulated Flavonoids and Zinc Flavonolate Complexes as Antiviral-Antioxidants to Inhibit CMV Infectivity and Associated Oxidative Damage. D.W. Britt (P.I.), Elizabeth Vargis (Co.P.I.), Lisa Berreau (Co.P.I.), Utah State University. July 1, 2015 – June 30, 2016. **$20,000**.
8. NSF MRI: Acquisition of a Beckman ProteomeLab-XLI Analytical Ultracentrifuge to Enhance Research and Training. N. Dickenson (P.I.), E. Anthony, Joanie Hevel, Lance Seefeldt, Sean Johnson, John Takemoto (Senior Personnel), D.W. Britt (Senior Personnel) October 1, 2015 – September 30, 2018; **$388,206**.
9. USU AES Seed Grant: The Dynamic Interplay of Microbes and Roots in Influencing Plant Health. A.J. Anderson (P.I.), D.W. Britt (Co. P.I.), Utah State University. July 1, 2014 – June 30, 2015. **$20,000**.
10. NSF MRI: Acquisition of a Field-Emission Scanning Electron Microscope to Catalyze Campus-Wide Research in Bio/Nano and Advanced Energy Materials, Tsung-Cheng Shen (P.I.), Astrid Jacobson (Co. P.I.), D.W. Britt (Co. P.I.), Heng Ban (Co. P.I.), John W. Shervais (Co. P.I.), National Science Foundation, Sept. 1 2013- Aug. 31 2016, **$529,387**.
11. USU RC: Structural Integration of an Interface-Enabled Multifunctional Nanocomposite. L. Liu (P.I.), D.W. Britt (Co. P.I.). Utah State University. July 1, 2013 – June 30, 2014. **$20,000**.
12. Plant-microbial interactions: effects of sublethal doses of nanoparticles, A.J. Anderson (P.I.), D.W. Britt (Co. P.I.), J. McLean (Co. P.I), Christian Dimkpa (Co. P.I.). United States Department of Agriculture – National Research Initiative, Jan 01, 2012 – Dec 31, 2014. **$499,915**.
13. NSF MRI: Acquisition of a mask aligner and a pattern generation system for nanoscale science and device research. T.C. Shen (P.I), Tim Gilbertson (Co-P.I.), D.W. Britt (Co-P.I.), Bedri Cetiner (Co-P.I.), Ken White (Co-P.I.). National Science Foundation + USU, Jan 01, 2011 – Dec 31, 2013. **$141,066**. (includes USU matching)

14. Impact, Detection, and Tracking of NP in Agriculture: A Focus on Crops and Rhizosphere Microbes. D.W. Britt (P.I.), A.J. Anderson (Co. P.I.), J. McLean (Co-P.I.) United States Department of Agriculture – National Research Initiative. January 1, 2009 – December 31, 2011. **$442,086**.
15. Hydrophilic polymer layers, associated interfacial water structure, and materials biocompatibility. D.W. Britt (P.I.), American Heart Association, BGIA, July 1, 2006 – June 30, 2008. **$140,000**.
16. PNNL-EMSL: Microcantilever Sensors with Integrated Microfluidics. D.W. Britt (P.I.), Environmental Molecular Science Laboratory, Pacific Northwest National Laboratory. EMSL-User Grant June 2008. P.I. hosted 1-week, provided exclusive access to Ga focused ion beam / SEM / optical profiler + technician **$20,000.**
17. Development of Non-Fouling Coatings for Cardiovascular Materials and Devices: Engineering Surface Dipoles and Associated Interfacial Water Structure for Enhanced Biocompatibility. D.W. Britt (P.I.) Community/University Research Initiative Grant. June 1, 2006 – August 31, 2007. **$32,805**.
18. Protein structure sensors through molecular imprinting: Applications towards prion detection and correction. D.W. Britt (P.I.) United States Department of Agriculture – National Research Initiative. June 1, 2005 – Dec 31, 2008. **$200,000**.
19. Development of Hyaluronic Acid Gels as Resorbable Implant Materials Having Intrinsic Antibacterial Properties: Direct Applications in Middle Ear Ventilation Tubes. D.W. Britt (PI), Thomas Hauser (Co. P.I.), Albert Park (Co. P.I.), USU Center for Integrated Biosystems, July 2005 – June 30, 2006. **$44,000**.
20. Re-Defining Biological Engineering in an Integrated Research and Cooperative based Undergraduate Curriculum. D.W. Britt (P.I.), T. Taylor (Co. P.I.), K.T. Nguyen (Co. P.I.), National Science Foundation, September 1, 2004 – July 30, 2006. **$100,000**.
21. Two-Dimensional Sol-Gel Protein Imprinting, D.W. Britt (P.I.), J. Miller (Co. P.I.), V. Hlady (Co. P.I.) National Science Foundation, July 01, 2004 – June 30, 2005. **$100,000**.
22. Development of Lactose-Hydrogels. D.W. Britt (P.I.), L. Dudley (Co. P.I.) Anne Anderson (Co. P.I.), Dairy Management Inc., March 1, 2005 – December 31, 2007. **$36,000**.
23. Role of Hemodialysis Membrane Physiochemical Properties on Endotoxin adsorption. D.W. Britt (PI). Fresenius Medical Care, North America. October 1, 2005 – January 30, 2006. **$23,500**.
24. Novel chemistries for hollow fiber membranes to restrict lipopolysaccharide (LPS) transfer across hollow fiber membranes. D.W. Britt (P.I.). Fresenius Medical Care, North America. October 1, 2005 – January 30, 2006. **$12,000**.
25. Characterizing LPS distribution on hollow fibers with scanning probe microscopy. D.W. Britt (P.I.). Fresenius Medical Care, North America. October 1, 2005 – January 30, 2006. **$12,000**.
26. USU SPARC: Nanoparticle Cancer Therapeutics. Tim Doyle P.I., D.W. Britt (Co. P.I.) July 1, 2008 – June 31, 2009. **$30,000**.
27. Improving water infiltration and retention in irrigated soil treated with biodegradable lactose-based wetting agents. D.W. Britt (P.I.) Community/University Research Initiative Grant. May 1, 2004 – October 1, 2005. **$19,000**.
28. USU ADVANCE: The Development of Biomedical and Environmental Engineering Curricular Materials for Use in High School Biology Courses. Paul Schreuders (P.I.), Joanne Bentley (Co. P.I.), D.W. Britt (Co. P.I.), Laurie McNeill (Co. P.I.), Kytai Nguyen (Co. P.I.), Timothy Taylor (Co. P.I.). January 1, 2005 – December 31, 2005. **$2,000**.
29. International Travel Fellowship: Germany, May 2005. USU Gardner Foundation, **$1,000**.
30. International Travel Support: Germany / Spain, May 2004. USU CIB, **$1,500**.
31. Mapping Surface Potential in Lipid Monolayers and Thin Polymer Films. D.W. Britt (P.I.), C.C. Williams (Co. P.I.) Center for Biopolymers at Interfaces, University of Utah. (July 2002 - June 2004). **$18,000**.
32. In Kind Equipment Donation for BIE 3000 (Bioinstrumentation). D.W. Britt (P.I.). Five CR-10X dataloggers and software from Campbell Scientific, Inc. January 2003. **$5,000**.

33. Interfacial Water Structure and Surface Potential Amplification Associated with Mixed Lipid Monolayers. D.W. Britt (P.I.), Utah State NFRG. (July 1, 2003 – June 30, 2004). **$10,093**.
34. Creating nanoscale molecular imprints using 2-D monolayer templating. V. Hlady (P.I.), D.W. Britt (Co. I.). National Science Foundation (12/1999 – 11/2001) **$100,000**.
35. Molecular templating and entrapment in monolayers. D.W. Britt (P.I.) National Science Foundation-NATO Post-Doctoral Research Program (09/1998 – 09/1999.) **$45,000**.

2.3. Additional Support through Utah Agricultural Experiment Station Project Hatch Projects.

Funding provides nominal operating funds and approximately 1.5 months of 9-month appointment (no extra compensation, e.g. summer salary, provided)

1. UAES: OMV activity in the rhizosphere and bio-fortification applications D.W. Britt (P.I.) July 1, 2016 – June 30, 2021.
2. UAES: Nanotherapeutics for Amyloid Disease. D.W. Britt (P.I.) July 1, 2011 – June 30, 2016.
3. UAES: Development of lactose-surfactants and polymers to improve water utilization and reduce soil runoff in agricultural and municipal settings. D.W. Britt (P.I.) July 1, 2005 – June 30, 2010.

2.4. Pending Proposals

1. NSF REU Site: STEM for Plant Health, D.W. Britt (P.I.), A. Anderson (Co. P.I.), T. Taylor (Co. I), W. Pearse (Co. I), I. Villanueva (Co. I). March 1, 2019 – February 28, 2022. $343,261.
2. USDA-NIFA. L. Bastarrachea (P.I.), D.W. Britt (Co. P.I.), T. Chang (Co. P.I.), Reusable Antimicrobial Plastics for Food Processing and Handling Applications. January 1, 2019 – December 31, 2021. $500,000.
3. USDA-NIFA. Agricultural Microbiome: A. Jacobson (P.I.), D.W. Britt (Co. P.I.), A. Anderson (Co. P.I.), J. Norton (Co. P.I.), J. McLean (Co. P.I.), *Wheat root microbiome roles in improving micronutrient bioavailability in calcareous soils.* July 1, 2019 – June 30, 2022. $750,000.

2.5. All NSF proposals Submitted (9/2018 report from Research.gov)

Tracking	Descriptive Title of Project	Status	Status Date	Requested $
1852553	REU Site: STEM for Plant Health	Pending	08/23/2018	$343,261
1758987	Plant-microbe micronutrient acquisition pathways in nutrient-limited soil: Influence of soil organic matter, biofilm architecture and chelate production	Declined	05/06/2018	$899,999
1757993	REU Site: STEM for Plant Health	Declined	02/15/2018	$320,384
1705874	CuO NP bioactivity in the wheat rhizosphere: Interplay of soil chemistry, root exudation, and biofilms	Awarded	07/24/2017	$308,162
1645938	Inter-kingdom micronutrient pathways in calcareous soils	Declined	12/20/2016	$715,583
1605592	Nano-Bio Phenomena in the Rhizosphere	Declined	04/20/2016	$313,290
1606161	Silane modulation of pathogenic protein conformation and assembly	Declined	04/04/2016	$300,000
1532216	MRI: Acquisition of Atomic Force Microscopy Raman System with TERS	Declined	07/16/2015	$584,831
1538297	A Hierarchical Energy Dissipating Composite Based on Nanoporous Particle Suspended Liquid	Declined	06/18/2015	$372,008

1525811	IUSE: En-S.T.E.A.M. Integrated Design Curriculum Model Development	Declined	05/15/2015	$455,666
1512327	Understanding Molecular Interactions in Wax-Based Materials to Engineer 2-D and 3-D Structures	Declined	04/04/2015	$329,085
1512143	CuO nanoparticle impact at the root / bacterial biofilm interface: A systems approach	Declined	04/04/2015	$312,539
1446099	NUE: An Immersion Approach to Nanotechnology in Engineering	Declined	09/03/2014	$200,000
1429755	MRI: Acquisition of Atomic Force Microscopy Raman System with TERS	Declined	08/20/2014	$774,393
1438617	Plant root and bacterial biofilm mediation of CuO nanoparticle fate	Declined	07/14/2014	$299,493
1402825	Understanding Molecular Interactions in Wax-Based Materials to Engineer 2-D and 3-D Structures	Declined	03/28/2014	$264,627
1335550	Effects of Metals from Flue Gas on Microalgae Biofuels and Co-products: Sustainability and Scalability	Awarded	08/08/2013	$335,081
1344881	SNM: Scalable Manufacturing of Nanofibers and Ribbons from Recombinant Spider Silk Proteins	Declined	08/15/2013	$1,339,461
1337932	MRI: Acquisition of a Field-Emission Scanning Electron Microscope to Catalyze Campus-Wide Research in Bio/Nano and Advanced Energy Materials	Awarded	07/28/2013	$529,387
1335574	DMREF: Design and Fabrication of Energy Dissipating and Self-Healing Hierarchically Structured Multifunctional Composites	Declined	07/17/2013	$448,420
1336954	Evolution of ZnO nanoparticle properties and soil microbial bioreactivity by soil pore water	Declined	05/11/2013	$308,489
1310349	Altered bacterial fitness by sublethal antimicrobial and nonfouling biomaterials coatings	Declined	02/13/2013	$254,420
1263933	Phase behavior and thermodynamic characterization of long chain acyclic aliphatic esters used in the formation of wax-based self-assembled soft materials (SASM)	Declined	12/21/2012	$258,009
1229685	MRI: Acquisition of a Multi-User Field-Emission Scanning Electron Microscope to Catalyze a Campus and Statewide Research Group in Bio/Nano and Advanced Energy Materials	Declined	08/06/2012	$1,455,262
1236575	Nanoparticle-directed bacterial metabolism: what is the role of particle size?	Declined	06/04/2012	$331,448
1160183	Protein Conformation Specific Surfaces and Nanoparticles	Declined	01/26/2012	$271,203
1159329	Thermodynamic characterization of phase transitions in self-assembled soft materials (SASM) composed of wax/oil mixtures	Declined	12/08/2011	$264,794
1134445	Protein Conformation Specific Surfaces: Plastic Antibodies and Enzymes	Declined	07/19/2011	$155,001
1133582	ZnO nanoparticles, size and shape: environmental impact on plant function	Declined	06/30/2011	$306,377
1067666	Protein Conformation Specific Surfaces: Plastic Antibodies and Enzymes	Declined	02/18/2011	$155,001
1040435	MRI: Acquisition of a mask aligner and a pattern generation system for nanoscale science and device research	Awarded	09/07/2010	$101,066
0942980	Biological Engineering Research and Design: Fostering Research-Scholars without Compromising Engineering Design.	Declined	11/04/2009	$75,001

0923289	MRI: Acquisition of an Analytic Scanning Electron Microscope with Lithography Capability at Utah State University	Declined	08/17/2009	$384,902
0829188	Laser fabricated silver-titanium biomaterials: antimicrobial activity and osteocyte response	Declined	07/31/2008	$240,000
0828073	Fate Of Antimicrobial Nanoparticles: Environmental Transformation And Microbial Activity.	Declined	06/26/2008	$240,057
0748286	CAREER: Development of Hyaluronic Acid Gels as Resorbable Implant Materials	Declined	12/23/2007	$400,000
0645218	CAREER: Molecular Recognition at Engineered Interfaces	Declined	12/13/2006	$400,000
0604118	NER: REU Supplement - Two-Dimensional Sol Gel Protein Imprinting	Declined	03/30/2006	$6,656
0500775	The Waters Micromass Q-Tof Mass Spectrometer and the Research it willl Support at Utah State University	Declined	03/21/2005	$233,158
0515585	EXT: The Women Oriented Resources & Life Development Program - Reaching Out Through Biological Engineering	Discouraged	02/25/2005	$1,060,000
0505298	ITEST: The Populations, Organisms, and Environment Program - An integrated educational experience for teachers and students	Discouraged	12/07/2004	$1,196,552
0449413	CAREER: Applied Molecular Self-Assembly to Detect and Direct Proteins and Cells at Interfaces	Declined	11/02/2004	$400,004
0404262	Two-Dimensional Sol Gel Protein Imprinting	Awarded	07/07/2004	$129,932
0431824	Redefining Biological Engineering with an Integrated Research and Cooperative based Undergraduate Curriculum	Awarded	07/07/2004	$99,999
0421484	Development of Very Large Sample Capability for Particle Image	Declined	05/21/2004	$179,129
0343310	Redefining Biological Engineering with an Integrated Research and Cooperative based Undergraduate Curriculum	Declined	12/02/2003	$100,000
			TOTAL:	$18,452,130

3. Service and Outreach: Community, Department, College, University

Student Outreach and Advising

Summer student lab host

- REU: Developed and delivered an 8-week research experience for underrepresented minorities from 2-year colleges (May 8-July 4, 2017). Interviewed and recruited 9 students from the College of Southern Idaho and USU Blanding. Participants: Cassie Bahe, Henok Zewelde, Justin Whatcott, Aaron Beauford, Tyler Tohee, Dolphina Kaye, Rolajuwon Clark, Logan Harvey, Derrick Kettering). Program highlights and participant research: https://be.usu.edu/news/main-feed/2017/summer-outreach
- USU NASMP Native American Student Mentorship Program: (2013 – present). Hosted 2 students from the USU Blanding Campus in my laboratory each summer for 4-weeks
    - 2018 – Samantha Lano, Kylie Reese
    - 2017 – REU hosted six Blanding Campus students
    - 2016 – Ty Charley, Kelvin Yazzie
    - 2015 – Chris Capitan and Christina Morgan (both transferred to USU and current BE students)

  - 2014 – Martha Tabao and Shundin Atene
- High School Students Hosted in Lab / Research Mentor for Science Fair Projects
  - Logan High School Raymond Li (2016)
  - Logan High School, Steven Ban (2013)
  - InTech Collegiate High school, Srisurya Sidharthan (2013)
  - InTech Collegiate High School, Arther Hart (2012)
  - InTech Collegiate High School, Josh Israelsen (2012)
  - InTech Collegiate High School, Tyler Dewey (2011)
  - Uniondale High School, NY, Summer Student Host (Manny Flores-Bonilla, 2011)
- USU Summer Academy: Hosted 2-4 high school students in my laboratory for 1 week (2003 - present)
- USU Engineering State: Developed and ran multiple challenge sessions (45 min hands-on modules to groups of 20 students) during this week long high-school outreach and recruitment (2002 – 2008)

STEM community service

- Provided the entire 2018 NASMP cohort (29 students) an overview of engineering research at USU and ran a formal tour of the College of Engineering IDEA Factory and Microfabrication Lab
- Intel International Science and Engineering Fair (ISEF) High School Science Fair judge for Cache Valley Schools (March 21, 2015; February 27, 2016)
- USU Intermountain Graduate Research Symposium poster judge (2011 – 2013)
- University of Utah Biomedical Engineering Conference poster judge (2010)
- USU Scholars Day Undergraduate Research Fellow panelist (2005)
- Cache Valley youth group Biological Engineering lab tour and career overview (January, 2016)
- Nanodays community outreach module: Nanoparticle photoluminescence and everyday applications, The Leonardo Science Museum, Salt Lake City (April 6, 2013)
- The Leonardo Science Museum, Salt Lake City, UT, Focus Group Member (2006 - 2007)
- USU 1010 Connections: Freshman integration speaker (2003)

Promotion of diversity

- USU Latino Student Union (formerly Hispanic Student Union) ad hoc advisor (2004 - 2008)
- Health Occupation Students of America (HOSA) Club, USU Chapter faculty co-advisor (2007 - present)
- USU Honors Program scholarship panelist (2007)
- USU Diversity Pageant judge (2004)
- Logan High MESA Club guest speaker (2005 - 2008)

Departmental Service

- Interim Department Head (2016 – present)
- Undergraduate recruitment, retention, advising (2002 – present)
- Department undergraduate scholarship review (2002 - present)
- Promotion and Tenure Committees
  - Member: Dr. Elizabeth Vargis (2013 – 2016)
  - Member: Dr. Daniel Hyduke (2013 – 2015)
  - Chair: Dr. Yue Cui (2011 – 2015)
  - Member: Dr. Charles Miller (2009 – 2014)
  - Chair: Dr. Jixun Zhan (2009 – 2012)
  - Member: Dr. Soonjo Kwon (2009 – 2012)
  - Member: Dr. Sridhar Viamajala (2008 – 2009)
- Faculty Search Committees

  - Chair: 2 positions filled in 2013 (Dr. Daniel Hyduke, Dr. Elizabeth Vargis)
  - Member: 1 position filled in 2011 (Dr. Yue Cui)
  - Chair: 1 position filled in 2006 (Dr. Soonjo Kwon)
  - Co-Chair: 2 positions filled in 2003 (Dr. Anhong Zhou, Dr. Kytai Nguyen)
- Biological Engineering Curriculum Committee
  - Chair (2005 - 2017)
  - Member (2002 - 2004)
- Biological Engineering ABET Committee member (2002 - 2016). Co-wrote the Department Response to the 2015 ABET Program Evaluation, successfully addressing a weakness in the continuous improvement process identified during the site visit.
- Biological Engineering staff search and selection: Graduate Program Coordinator / Staff Assistant

College / University Service

- University Administration Search Committees
  - USU President Search Committee Member (Fall 2016 – Spring 2017)
  - USU Associate Vice President for Research Search Committee Member (Spring 2018)
- Promotion and Tenure Committees
  - Member: Dr. Idalis Villanueva (EED, 2018 – present)
  - Member: Dr. Angela Minichiello (EED, 2018 – present)
  - Member: Dr. Luis Bastarrachea (NDFS, 2017 – present)
  - Member: Dr. Nicholas Roberts (MAE, 2012 – present)
  - Member: Dr. Siddhartha Das (Chemistry, 2011 – 2014)
  - Ombudsman: Dr. Jarred Berrett (Applied Sci Tech Ed, 2012 – present)
  - Ombudsman: Dr. John Rice (Civil Engineering, 2013 – 2015)
  - Ombudsman: Dr. Oenardi Lawanto (EED, 2009 – 2014)
  - Ombudsman: Dr. David Rosenberg (CEE, 2009 – 2014)
  - Ombudsman: Dr. Amy Alexander (Education, 2012)
  - Ombudsman: Dr. Rose Hue (Electrical Engineering, 2013)
- General Committees and Mentoring
  - USU Safety Committee Representative for the College of Engineering (2016 – present). This included attending Safety by Design workshops in Bethesda, MD, April 10-13, 2016.
  - Biological Engineering Safety Committee Chair (2016 – present)
  - USU Agriculture Experiment Station Seed Grant Reviewer (2018)
  - College of Engineering Curriculum Committee: Biological Eng. representative (2014 - 2017)
  - USU Teaching Coach for Dr. Idalis Villanueva (2013 - 2014)
  - USU Faculty Senator, COE Representative (2013 - present)
  - USU Research Week Poster Judge (2012 - present)
  - College of Engineering Retention and Recruitment Committee member (2004 - 2006)
  - USU Center for Integrated Biosystems Strategic Directions Working Group member (2004 - 2008)
  - USU Annual Leave Committee member (2006 - 2007)

Professional Service: Grant Review

- National Science Foundation panels
  - NSF EPSCoR Research Infrastructure Improvement (RII) Track-1 proposals (2018)
  - NSF-GRFP (2011, 2012, 2015)
  - NSF-DLR (2005)

  - NSF-NIRT (2004)
- NDSEG Panel Graduate Fellowships (2008)
- United States Department of Agriculture (USDA) ad hoc reviewer
- United States-Israel Binational Science Foundation (BSF) ad hoc reviewer
- Arizona Disease Control ad hoc reviewer (2006 – present)
- Pacific Northwest National Laboratory Environmental Molecular Sciences Laboratory (2012)
- ACS Petroleum Research Fund (2008)

Professional Service: Journal Review

- Acta Biomaterialia
- Applied Materials and Interfaces
- Biomacromolecules
- Biosensors & Bioelectronics
- Biotechnology Progress
- Colloids and Surfaces (A, B)
- Chemistry of Materials
- Environmental Science: Nano
- J. Agriculture and Food Chemistry
- J. American Chemical Society
- J. Applied Polymer Science
- J. Applied Spectroscopy
- J. Biomedical Materials Research
- J. Carbohydrate Chemistry
- J. Colloid Interface Science
- J. Hazardous Materials
- J. Materials Chemistry
- J. Molecular Recognition
- J. of Physical Chemistry
- Langmuir
- Science of the Total Environment
- Sensors

Professional Service: Journal Editor

- Guest Editor for *Agronomy*, MDPI, Special Issue: Nanotechnology Applications in Agriculture Systems (2018)
- Editorial Board for *Molecules*, MDPI (2018 – present)

Professional Service: Conference Organization

- Program organizer, fundraiser, and co-chair: Gordon Research Conference on Nanoscale Science & Engineering for Agriculture & Food Systems, Mount Holyoke College, South Hadley, MA, June 2-8, 2018
- Session organizer and chair: Sustainable Nanotechnology Organization (SNO) Conference, Orlando, FL, November 10-12, 2016
- Session organizer and chair: Biomaterials & Tissue Engineering. Institute of Biological Engineering Annual Conference, Salt Lake City, UT. March 30 – April 1, 2017.
- Program organizer, fundraiser, and co-vice-chair: Gordon Research Conference on Nanoscale Science & Engineering for Agriculture & Food Systems, Bentley University, Waltham, MA, June 7-12, 2015.
- Session Organizer and Chair: Nanoparticles in Agriculture and Environment, ACS Colloids and Surfaces Division, American Chemical Society National Meeting, Boston, MA August 16-20, 2015
- Program Session Organizer: NanoUtah 2011, Annual Nanotechnology Conference and Exhibition, Salt Lake City, UT, Hilton City Center, Oct 13-14, 2011
- Conference Co-Chair: NanoUtah 2012 Annual Nanotechnology Conference and Exhibition, Salt Lake City, UT, The Leonardo Museum, Oct 11-12, 2012
- Conference Co-Chair: NanoUtah 2013 Annual Nanotechnology Conference and Exhibition, Salt Lake City, UT, University of Utah, Oct 18, 2013

4. Teaching, Mentorship, Peer Collaborations

Courses Taught

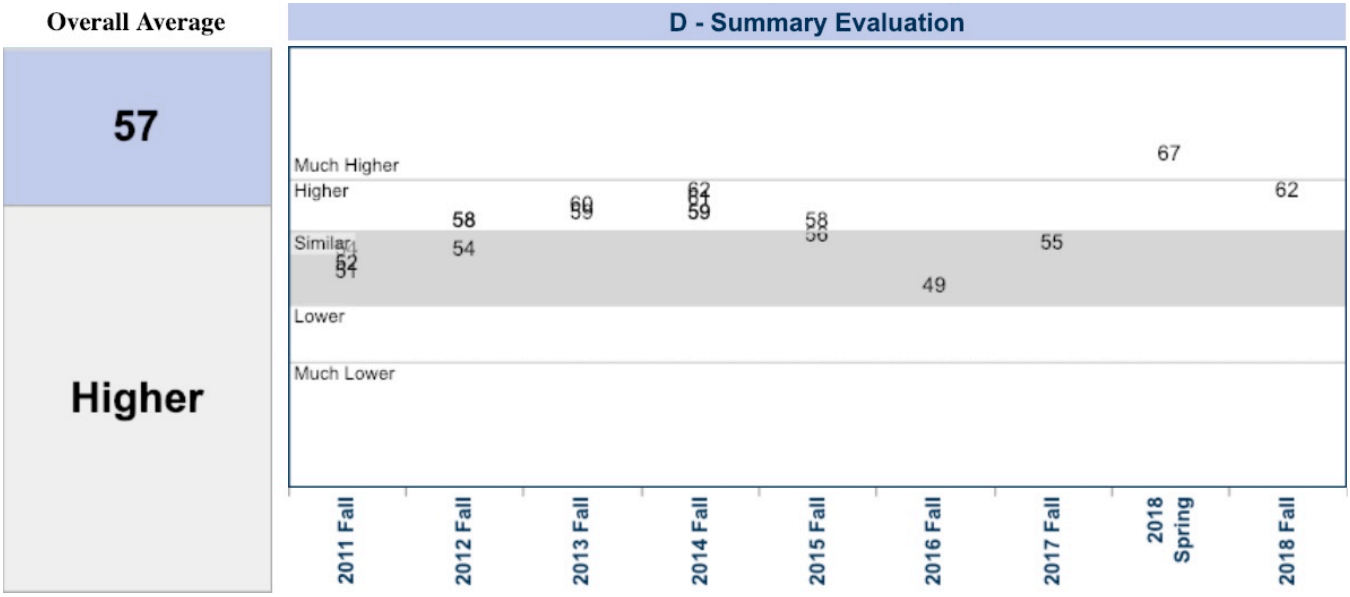
Utah State University

1. BENG 1890-1 (1 cr) Methods in Undergraduate Research + Lab (2007 - 2012; 2014 - 2015)
2. BENG 1890-2 (1 cr) Created a 2nd course section when class size exceeded 60 students (2011; 2014 - 2015)
3. BENG 2330 (3 cr) Properties of Biomaterials (2002-2016)
4. BENG 2330-501 (0 cr, lab section) (2002-2016)
5. BENG 2330-502 (0 cr, lab section) (2011-2016) Created a 2nd lab section - class size exceeded 25 students
6. BENG 2330.web (3 cr) Properties of Biomaterials (electronic-course developed and taught remotely, 2009)
7. BENG 3000 (2 cr) Bioinstrumentation Lecture and Lab (2003, 2004)
8. BENG 3870 Junior Design (1 cr) (2003)
9. BENG 4890-1 (0 cr, capstone team recitation) Senior Design III, Fall-Spring, (2011 – 2016; 2018)
10. BENG 5850 / 6850 (3 cr) Biomaterials Engineering (2002 - present)
11. BENG 6860 Graduate Research Seminar (1 lecture, Spring, 2013)
12. BENG 6930 Special Studies in Interfacial Science and Engineering (Spring, 2004)
13. PHYX 2400 Introduction to Nanotechnology (2 lectures; H Yang Instructor, 2005)
14. ENGR 1000 Introduction to Engineering Design (1 lecture / year 2002-2008)
15. PHYX 5700 Microfabrication (1 lecture + lab module; T-C Shen Instructor, 2012 - present) This course was developed as part of our NSF-MRI grant funding for microfabrication resources.

Student Evaluations

The rating systems changed from a six-point scale (2002 – 2010) to the IDEA Evaluation System (2011 – Present)

- Six-Point Ratings 2002 – 2010
  - Overall quality of course average = 4.9 / 6.0
  - Instructor effectiveness average = 5.0 / 6.0
  - Both composite scores are <u>higher than the College of Engineering averages</u> over the same period.
- IDEA Ratings Five-Point Scale 2011 – 2017
  - Progress on Relevant Objectives = 57
  - Excellent course (raw score) average = 55. 5-point scale = 4.2. 5.0
  - Excellent teacher (raw score) average = 55 . 5-point scale = 4.4 / 5.0
  - Summary Evaluation = 56 (from the IDEA ranking this is considered "<u>statistically higher than my peers teaching similar courses</u>") – Graphically displayed below from IDEA database.



IDEA Summary Course Evaluations 2011 - present

Dip in 2016 corresponds to switching BENG 5850/6850 from MWF 10:30am to T,H 12:00pm, while also starting as Interim Department Head.

Other Teaching and Instruction: University of Utah

1. BioMed Eng 6040 (3 cr) Introduction to Biomaterials (2001)
2. BioMed Eng 3101 (1 cr) Undergraduate Biomedical Engineering Laboratory (2001)

USU teaching summary:

- Total (2002 – 2018): Developed and taught 7 different courses (5 undergraduate core courses, 2 graduate electives). Also developed a formal lab section for BENG 2330, and have incorporated lab modules for my other courses to creates a hands-on learning.
- 2010 – 2018: Average of 2.6 courses per year, 71 student credit hours per course (SCH) for an annual SCH of 186. (SCH taught for a course = course credits x student enrollment)

Mentoring

Postdoctoral and Graduate Students Supervised (4 postdoctoral, 25 graduate students)

Postdoctoral associates

1. Dr. Christian Dimkpa (June 2009 – June 2012)
2. Dr. Alejandro Heredia (Oct 2006 – May 2007)
3. Dr. Nicholas Turner (May, 2005 – May 2006)
4. Dr. Bryon Wright (Dec 2005 – June 2006)

Ph.D. Completed or In-Progress

1. Nafisa Tasneem Nusha “Nanoparticle-microbe-plant interactions for improved crop production” – new student recruited to begin Ph.D. July, 2019.
2. Anthony Cartwright “Protective Osmolyte Coronas to Enhance Nanoparticle Bioavailability and Activity” August 2017 - present
3. Abul Bashar Mohammad Giasuddin “Directing Protein Secondary Structure through Sol-Gel Processes” Ph.D. Awarded May 2018
4. Yun Peng “Protein Conformation Detection through Molecular Imprinting” Ph.D. Awarded May 2011
5. Ben Madsen “Hemodialysis Membrane as a Barrier to Endotoxin Transfer” Ph.D. Awarded December 2009
6. Harshil Dhruv “Development of Protein Selective Surfaces” Ph.D. Awarded December 2008

M.S. Completed or In-Progress

1. Aaron Dryden, Industry-USU project, to begin April 2019
2. Ian Wadsworth “Sustained release nano-delivery systems tested against murine cytomegalovirus tissue culture models” (August 2018 – present)
3. Matthew Potter “Protecting wheat against drought through application of biotic and abiotic nanoparticles in the rhizosphere” (January 2018 – present) – student has expressed interest in continuing for a Ph.D.
4. Katelyn Anderson “Surface Characterization and Protein Adsorption of HFMs of Varying PVP Content” (January 2017 – present)
5. David Hoyt “In-vivo / In-vitro Analysis of Middle Ear Ventilation Tubes Containing Silver Antimicrobials” (January 2015 - present)
6. Michelle Bonebrake “Characterization of Biofilms in a Synthetic Rhizosphere using Hollow Fiber Root-Mimetic Systems” (January 2017 – present) Student successfully defended, revising thesis
7. Priyanka Gajjar “Effects of Pluronics on the Beneficial Soil Microbe Pseudomonas Putida Strain KT2440”, M.S. awarded March 2010
8. Nidhi Garg, Co-advisor with M. Walsh, Dept. of Nutrition and Food Science “Characterization of Lactose-Amine Emulsifying Properties”, M.S. awarded December 2009
9. Xiao Liu, “Protein recognition by molecular imprinting using surface plasmon resonance”, M.S. awarded September 2006
10. Gopinath Narasimhan, “Morphological and physical properties of *Pseudomonas chlororaphis* biofilms: Atomic force microscopy and digital pulsed force mode microscopy approaches”, M.S. awarded May 2006

11. Wes Hopwood, “Using lactose and lactose-based compounds for controlling erosion in furrow irrigation”, M.S. awarded May 2006
12. Mundeta Taveras, “Development of a microcantilever sensor array”, M.S. awarded April 2005
13. Harshil Dhruv “Role of lactose in modifying gel transition temperature and morphology of self-assembled hydrogels”, M.S. awarded May 2005
14. Matthew Draper, “Development of a biochromic sensor for the determination of male fertility”, M.E. awarded May 2004

Graduate Students Supervised: Departed or Dismissed before Completion

Ph.D.

1. Shuo Chen (December 2017 – August 2018) “Nanoparticle Seed-Priming Approaches to Improve Crop Yield” Student returning to China
2. Gopinath Narasimhan, “Non-Fouling Strategies at Dynamic Interfaces” (April 2006 – April 2007) Student dismissed for unsatisfactory progress
3. Revathi Pepalla “Protein imprinting in Langmuir Monolayers” (April 2004 – January 2006) Student selected to leave for employment with CH2MHILL

M.S.

1. Andrew Vanderwerf “Nanoparticle Functionalized Ultrafiltration Membranes” (January 2015 – August 2015) Student departed for health reasons
2. Mitchell Bullough “Microfluidic Designs for Spinning of Synthetic Spider Silk” (June 2013 – April 2014) Student took employment with Nelson Laboratories prior to completion
3. Özkan Fidan “Design of a Nanoscale Energy Absorption System” (June 2013 – July 2014) switched focus to synthetic biology, and later switched to Metabolic Engineering.
4. Neil Etherington “Fabrication and Characterization of Resorbable Middle Ear Ventilation Tubes”, Research completed, thesis never completed, student left for employment with Medicine Lodge, now CoorsTek Medical (2005 – 2007)

M.S. and Ph.D. Committee Member

1. Drew Gagon (Ph.D.) Department of Nutrition, Dietetics and Food Science (Chair: Dr. Luis Bastarrachea)
2. Jia Lu (Ph.D.) Chemistry and Biochemistry (Chair: Steve Scheiner)
3. Yagya P. Subedi (Ph.D.) Department of Chemistry and Biochemistry (Chairs: Dr. Leo Chen, Tom Chang)
4. Lei Sun (Ph.D.) Department of Biological Engineering (Chair: Dr. Jixun Zhan)
5. Thomas Harris (Ph.D.) Department of Biological Engineering (Chair: Dr. Randy Lewis)
6. Cameron Copeland (Ph.D.) Department of Biological Engineering (Chair: Dr. Randy Lewis)
7. Kurt Harris (Ph.D.) Department of Mechanical and Aerospace Engineering (Chair: Dr. Heng Ban)
8. Jeta Kadamne (Ph.D.) Department of Nutrition, Dietetics and Food Science (Chair: Dr. Silvana Martini)
9. Siyuan Wang (Ph.D.), Department of Biological Engineering (Chair: Dr. Jixun Zhan)
10. Fatih Ortakci (Ph.D.), Department of Nutrition, Dietetics and Food Science (Chair: Dr. Don McMahon)
11. Ying Lu (Ph.D.), Department of Nutrition, Dietetics and Food Science (Chair: Dr. Don McMahon)
12. Andrew Deceuster (Ph.D.), Department of Biological Engineering (Chair: Leijun Li)
13. Ranjeeta Wadhwani (Ph.D.) Department of Nutrition, Dietetics and Food Science (Chair: Dr. Don McMahon)
14. Deepankar Pal (Ph.D.) Department of Mechanical and Aerospace Engineering (Chair: Dr. Brent Stucker)
15. Laura Jeffries (Ph.D.) Department of Nutrition, Dietetics and Food Science (Chair: Dr. Conly Hansen)
16. Hemang Patel (Ph.D.) Department of Biological Engineering (Chair: Dr. Soonjo Kwon)
17. Yanzhe Yang (Ph.D.) Department of Mechanical and Aerospace Engineering (Chair: Dr. Brent Stucker)
18. Gerald Hodgkins (Ph.D.) Department of Bioengineering, University of Utah (Chair: Dr. Vladimir Hlady)
19. Gajendra Ingle (Ph.D.) Department of Chemistry and Biochemistry (Chair: Dr. Lisa Berreau)

20. Zhuorui Song (Ph.D.) Department of Mechanical and Aerospace Engineering (Chair: Dr. Hang Ben)
21. Priya Mary Abraham (Ph.D.) My Role was to serve as external reviewer for the written dissertation and oral defense. Landau Koblenz, Germany (Chair: Prof. Gabrielle Schaumann)
22. Jefferson Pontsler (M.S.) Biological Engineering (Chair: Dr. Yu Huang)
23. Lori Caldwell (M.S.) Biological Engineering (Chair: Dr. Elizabeth Vargis)
24. Chad Ricky DeMill (M.S.) Department of Mechanical and Aerospace Engineering (Chair: Dr. Jason Quinn)
25. Derek Hess (M.S.) Department of Mechanical and Aerospace Engineering (Chair: Dr. Jason Quinn)
26. Josh Hortin (M.S.) Department of Civil and Environmental Engineering (Chair: Prof. Joan McLean)
27. Paul McMannus (M.S.) Department of Civil and Environmental Engineering (Chair: Prof. Joan McLean)
28. Moumita Bhattacharya (M.S.), Chemistry and Biochemistry (Chair: Dr. Sid Das)
29. Shaun Adams (M.S.) Department of Nutrition, Dietetics and Food Science (Chair: Dr. Don McMahon)
30. Matt Groll (M.S.) Department of Biological Engineering (Chair: Dr. Timothy Taylor)
31. Gerald Hodgkins (Ph.D.) Department of Bioengineering, University of Utah (Chair: Dr. Vladimir Hlady)
32. Vikrant Deshmuk (M.S.) Department of Bioengineering, University of Utah (Chair: Dr. Vladimir Hlady)
33. Scott Riplinger (M.S.) Department of Mechanical and Aerospace Engineering (Chair: Dr. Thomas Hauser)
34. Jason Brown (M.S.) Department of Biological Engineering (Chair: Dr. Kamal Rashid)
35. Rena Baktur (M.S) Department of Biological Engineering (Chair: Dr. Soonjo Kwon)

Undergraduate Research, Honors Thesis, and Capstone Team Projects Supervised

1. Taylor Clegg, Celine Faupula, Greg Greenwood, Ben Holt, Cole Unice (Capstone 2018 - present)
2. James Gayer, Landon Jensen, Christian Nieman (Capstone 2018 - present)
3. Josh Tucker, Michaela Babcock, Katelyn Knudson (Capstone 2018 - present)
4. Kyle Jackson (Undergraduate Research, 2018 – present)
5. Devan Kunzler (Undergraduate Research, 2017 – present)
6. Christina Morgan (Undergraduate Research, 2017 – present)
7. Brock Redman (Undergraduate Research, 2017 – present)
8. Cameron Murray (Undergraduate Research, 2017 – present)
9. Cassie Bahe (Undergraduate Research, 2017 – present)
10. Shaylen Skidmore-Fidel (Undergraduate Research, 2017 – present)
11. MK Jones (Undergraduate Research, 2017 – present)
12. Taylor Eggertsen, Arther Hart, William Johnson (Capstone 2016)
13. Osten Rasmussen, Michael Sieverts, Chad Skidmore, Charles Roberts (Capstone 2016)
14. Stephanie Lawanto (Honors Thesis, 2014 – 2016)
15. Kenan Moss, Andrew Engelby, Jason Thorpe (Capstone 2016)
16. Josh Adams (Undergraduate Research, 2015 – 2016)
17. Jordan Goodman (Undergraduate Research, 2015 – 2016)
18. Kyle Isaacson, USU Engineering Undergraduate Research Program (EURP) Fellow (2012 – 2014)
19. Sean Bedingfield (Undergraduate Research, 2012 – 2015)
20. Rachael Johnson (Undergraduate Research, 2012 – 2015)
21. Carson Sparks, Cody Maughan, Zak Dymok (Capstone 2014)
22. Ashlyn Tucker, Brian Smith, Steve Houston, James Murphy (Capstone 2013)
23. Sydney Bone, Tyson Holverson, Eric Schmidt (Capstone 2013)
24. Richard Decker, Chauncy Tucker, Tim Eliason, David Harrison (Capstone 2012)
25. Michelle Taylor, Neil Draper, Kim Otteson, Jim Dimmick (Capstone 2012)
26. Alyssa Anderson-Calder, Alex Hatch, Aaron Winder, Cody Gunnel (Capstone 2011)
27. Darcie Christensen (Undergraduate Research 2011 - 2012)
28. Tyler Dewey (Undergraduate Research 2011 – 2012)

29. Michaela Hugie, Meredith Halling (Capstone 2011)
30. Brad Tuft, Shaun Chatelain (Capstone 2009)
31. Lindsay Robinson-Housley, Tammy Anderson (Capstone 2008)
32. Ryan Israelsen, Dan Odell (Capstone 2008)
33. Ben Clyde, Nathan Hansen (Capstone 2008)
34. Neil Etherington, David Hoyt (Capstone 2006)
35. Dustin Olsen, Ryan Angus (Capstone 2006)
36. Abby Tyler (Capstone, Honors Thesis, 2006)
37. Rocio Vazquez (Undergraduate Research 2006)
38. Jeremy Rasband (Undergraduate Research 2006)
39. Brad Henry (Undergraduate Research 2006)
40. Christel Olsen (Undergraduate Research 2005)
41. Elise McKenna (Undergraduate Research 2005 - 2006)
42. Landon Stoker (Undergraduate Research 2006)
43. Angie Burbank-Dixon (Undergraduate Research 2006)
44. Ben Draper (Undergraduate Research 2006)
45. Stanley Stolpe (Capstone 2005)
46. Tony Rodriguez, Jesse Johnson (Capstone 2005)
47. Mundeta Taveras (Capstone 2004)
48. Spencer Mann, Heath Hall (Capstone 2004)
49. Christopher Fox (Capstone 2003)
50. Thomas Goodman (Capstone 2003, University of Utah)

Highlights of Students Mentored and Mentoring Programs

1. Darcie Christensen. Research influence of metal oxide nanoparticles on bacterial secondary metabolite USU Robins Award Undergraduate of the Year (2017): https://engineering.usu.edu/news/main-feed/2017/robins-award Current NSF Graduate Research Fellow in Engineering Education at USU.
2. Alyssa Calder-Anderson. Research on surfactant and metal oxide nanoparticle biocidal activity. USU Robins Award Undergraduate Researcher of the Year (2011) and Peak Prize winner (2011)
    a. http://blog.usu.edu/undergraduateresearch/2011/04/17/alyssa-calder-named-peak-undergraduate-researcher-of-the-year/
    b. http://rgs.usu.edu/blog/researchers-recognized-at-the-2011-robins-awards/
3. Shania Bitsoie and Miles Robertson, underrepresented student summer research through the Biotechnology Summer Academy program: https://www.usu.edu/today/index.cfm?id=52533
4. Native American STEM Mentorship Program coverage: “USU's Native American STEM Program participants present research” by Mitch Henline, Cache Valley Daily, June 6, 2017. Retrieved from http://www.cachevalleydaily.com/news/local/article_b4e8c3d0-4b03-11e7-a2a5-b7abf23fd6f2.html
5. Plant-STEM REU (9 students, 8-week program) coverage: “Undergraduate students share research, experiences in STEM program” by Kevin Opsahl, The Herald Journal, June 30, 2017. Retrieved from http://news.hjnews.com/allaccess/undergraduate-students-share-research-experiences-in-stem-program/article_1ccab7e4-4c5b-5ff3-af94-8674bc5c5e48.html

Longitudinal Tracking of Graduate Students and Post-Doctoral Mentors

Graduate Students			
	Name	Period	Present Position
1	Abul Bashar Mohammad Giasuddin (PhD)	2012 – 2017	Research scientist with Evonik Inc, Allentown, Pennsylvania
2	Yun Peng (PhD)	2008 – 2011	Database Engineer, J. Walter Thompson, Dallas, Texas
3	Ben Madsen (PhD)	2005 – 2009	Process Development Engineer II, Thermo Fisher Scientific, Logan Utah
4	Harshil Dhruv (PhD, M.S.)	2005 – 2008 2003 – 2005	Assistant Professor at TGen Chandler, Arizona
5	Revathi Pepalla (PhD – incomplete)	2004 – 2006	Employed at CH2M HILL prior to completing degree. Currently Senior Environmental Engineer at Ramboll Environ., New York, New York
6	Michelle Bonebrake (MS)	2016 – 2018	Quality Assurance Engineer with GE Biomedical Division, Logan, UT
7	Priyanka Gajjar (MS)	2008 – 2010	Research Staff, Department of Agronomy, Iowa State University, Ames, Iowa
8	Nidhi Garg (MS)	2007 – 2010	Self-employed, startup. Zurich, Switzerland
9	Neil Etherington (MS)	2005 – 2007	Sr. Product Development Engineer at CoorsTek Medical, Logan, UT
10	Xiao Liu (MS)	2005 – 2006	Statistician - Computation at Eli Lilly and Company, San Francisco, CA
11	Gopinath Narasimhan (MS)	2004 –2006	Epidemiologist/Research Officer at Saskatchewan Cancer Agency Saskatoon, Saskatchewan, Canada
12	Wes Hopwood (MS)	2004 –2006	PDC Engineers, Anchorage, Alaska
13	Mundeta Taveras (MS)	2003 – 2005	Hardware Group Manager at National Instruments, Austin, TX
15	Matthew Draper (MS)	2003 – 2004	Senior Product Engineering Manager, Edwards Lifesciences Medical Devices, Irvine, California
Postdoctoral associates			
	Name	Time Period	Present Position
1	Dr. Christian Dimkpa	2009 –2012	Development Scientist at International Fertilizer Development Center, Florence, Alabama. Recently Naturalized US Citizen.
2	Dr. Alejandro Heredia	2006 –2007	Research Associate, Universidad Nacional Autónoma de México, Department of Radiation Chemistry and Radiochemistry, Mexico City, Mexico
3	Dr. Nicholas Turner	2005 –2006	Lecturer in Analytical Science, The Open University, Depart of Life, Health and Chemical Sciences. Milton Keynes, UK
4	Dr. Bryon Wright	2005 –2006	Senior Sensor Development Engineer at the Auckland Bioengineering Institute, Auckland, New Zealand