CURRICULUM VITAE

Steven W. Graves, Ph.D.

Professor
Department of Chemical and Biological Engineering (primary)
& Department of Biochemistry and Molecular Biology (secondary)
University of New Mexico

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2045 Centennial Engineering Center
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Center for Biomedical Engineering
University of New Mexico
Albuquerque, NM 87131-0001

graves@unm.edu
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EDUCATION

Ph. D. Biochemistry, Microbiology and Molecular Biology, 1998
The Pennsylvania State University, University Park, PA
Doctoral Dissertation: "The cloning, purification, and kinetic characterization of the catalytic subunit of the human mitochondrial DNA polymerase."

B.A. Biochemistry and Molecular Biology (Double Major), 1991
University of Colorado, Boulder, CO

PROFESSIONAL EXPERIENCE

2016 – Present **Chief Technology Officer**
Eta Diagnostics, Inc. Albuquerque, NM

2015 – Present **Professor**
Chemical and Biological Engineering Department, School of Engineering, University of New Mexico, Albuquerque, NM – Secondary appointment in Department of Biochemistry and Molecular Biology, University of New Mexico

2015 – Present **Co-Founder**
Helion Scientific, Inc., Albuquerque, NM

2015 – Present **Co-Founder**
Eta Diagnostics, Inc., Albuquerque, NM

2014 – Present **Special Assistant to the Dean, Health Sciences Relations**
University of New Mexico, Albuquerque, NM

2014 **Associate Dean for Research, School of Engineering**
University of New Mexico, Albuquerque, NM

2010 – 2014 **Director**
Biomedical Engineering Graduate Program, School of Engineering, University of New Mexico, Albuquerque, NM

2014 - Present **Full Member**
University of New Mexico Cancer Center – Cancer Therapeutics: Technology, Discovery and Targeted Delivery. University of New Mexico, Albuquerque, NM

2013 **Visiting Professor**
University of Eastern Piedmont, Department of Biotechnology, Novara, Italy

2011 – Present **Associate Professor** (Secondary Appointment)
Department of Biochemistry and Molecular Biology, School of Medicine, University of New Mexico, Albuquerque, NM

2008 – Present **Associate Professor**
Chemical and Nuclear Engineering Department, School of Engineering, University of New Mexico, Albuquerque, NM

2008 – 2012 **Associate Director**
Center for Biomedical Engineering, University of New Mexico, Albuquerque, NM

2007 – 2008 **Team Leader, Optical Spectroscopy and Instrumentation**
Biosciences Division, Los Alamos National Laboratory, Los Alamos, NM

2003 – 2008 **Adjunct Assistant Professor**
Biochemistry and Molecular Biology Department, University of New Mexico, Albuquerque, NM

2002 – 2008 **Technical Staff Member**
Biosciences Division, Los Alamos National Laboratory, Los Alamos, NM

1999 – 2002 **Post-Doctoral Fellow**
Biosciences Division, Los Alamos National Laboratory, Los Alamos, NM

1998 – 1999 **Applications Specialist**
KinTek Corporation, Austin, TX

1992 – 1998 **Graduate Research Assistant**
The Pennsylvania State University, University Park, PA

1991 – 1992 **Analyst**
Rocky Mountain Analytical Laboratory, Arvada, CO

PUBLICATIONS 51 publications, H-index of 21, 1681 citations. 19 publications since 2012, H-index of 19 since 2012, 1030 citations since 2012. (Google Scholar on 02/15/2017).

Full publication list and up to date citations (total and for each paper) can be found on my google scholar page –

https://scholar.google.com/citations?user=yPEXnglAAAAJ&hl=en

51. Stromberg, Loreen R., Nicolas W. Hengartner, Kirstie L. Swingle, Rodney A. Moxley, **Steven W. Graves**, Gabriel A. Montano, and Harshini Mukundan. "Membrane insertion for the detection of lipopolysaccharides: Exploring the dynamics of amphiphile-in-lipid assays." PloS one 11, no. 5 (2016): e0156295.

50. Woods, Travis A., Heather M. Mendez, Sandy Ortega, Xiaorong Shi, David Marx, Jianfa Bai, Rodney A. Moxley, T. G. Nagaraja, **Steven W. Graves**, and Alina Deshpande. "Development of 11-Plex MOL-PCR Assay for the Rapid Screening of Samples for Shiga Toxin-Producing Escherichia coli." Frontiers in Cellular and Infection Microbiology 6 (2016).

49. Loreen R. Stromberg, Zachary R. Stromberg, Afsheen Banisadr, **Steven W. Graves**,

Rodney A. Moxley, Harshini Mukundan, Purification and characterization of lipopolysaccharides from six strains of non-O157 Shiga toxin-producing Escherichia coli, Journal of Microbiological Methods, Volume 116, September 2015, Pages 1-7, ISSN 0167-7012, http://dx.doi.org/10.1016/j.mimet.2015.06.008.

48. Brown, Carl W., Matthew R. Lakin, Aurora Fabry-Wood, Eli K. Horwitz, Nicholas A. Baker, Darko Stefanovic, and **Steven W. Graves**. "A Unified Sensor Architecture for Isothermal Detection of Double-Stranded DNA, Oligonucleotides, and Small Molecules." *ChemBioChem* 16, no. 5 (2015): 725-730. **(COVER ARTICLE)**

47. Lamoureux, Loreen, Peter Adams, Afsheen Banisadr, Zachary Stromberg, **Steven Graves**, Gabriel Montano, Rodney Moxley, and Harshini Mukundan. "An optical biosensor for detection of pathogen biomarkers from Shiga toxin-producing Escherichia coli in ground beef samples." In SPIE BiOS, pp. 931004-931004. International Society for Optics and Photonics, 2015.

46. Lu Gao, C. Wyatt Shields IV, Leah M. Johnson, **Steven W. Graves**, Benjamin B. Yellen and Gabriel P. López., Two-Dimensional Spatial Manipulation of Microparticles in Continuous Flows in Acoustofluidic Systems. (2015) *Biomicrofluidics. 9(1): 014105. DOI: 10.1063/1.4905875*.

45. Lakin, M. R., Brown III, C. B., Horwitz, E. K., Fanning, M. L., West, H. E., Stefanovic, D., **Graves, S. W.** (2014), Biophysically inspired rational design of structured chimeric substrates for DNAzyme cascade engineering. *PLoS One 9 (10), e110986.*

44. Brown, C. W., Lakin, M. R., Horwitz, E. K., Fanning, M. L., West, H. E., Stefanovic, D. and **Graves, S. W.** (2014), Signal Propagation in Multi-Layer DNAzyme Cascades Using Structured Chimeric Substrates. Angew. Chem. Int. Ed., 53: 7183–7187. doi: 10.1002/anie.201402691**(designated 'Hot Paper')**

43. Brown III, C. B., Lakin M. R., Stefanovic, D., and **Graves, S. W.** (2014) Catalytic Molecular Logic Devices using DNAzyme Displacement, ChemBioChem, DOI: 10.1002/cbic.201400047 **(COVER ARTICLE)**

42. Piyasena, M. E., and **Graves, S. W.** (2014) "The Intersection of Flow Cytometry with Microfluidics and Microfabrication." *Lab on a Chip*, 2014, 14, 1044-1059 DOI: 10.1039/C3LC51152A **(INVITED ARTICLE)**

41. Cushing, K. W., Piyasena M. E., Carroll N. J., Maestas G. C., Lopez B. A., Edwards B. S., **Graves S. W.**, and Lopez, G. P., (2013) Elastomeric Negative Acoustic Contrast Particles for Affinity Capture Assays, *Anal. Chem.*, 85(4), 2208-2215. (**co-corresponding author)**

40. Austin Suthanthiraraj, P. P. and **Graves, S. W.** (2013). Fluidics. Current Protocols in Cytometry. 65:1.2.1–1.2.14. **(INVITED ARTICLE)**

39. Gossett, D. R., Tse, H. T. K., Dudani, J. S., Goda, K., Woods, T. A., **Graves, S. W.** and Di Carlo, D. (2012), Inertial Manipulation and Transfer of Microparticles Across Laminar Fluid Streams. Small, 8: 2757–2764. doi: 10.1002/smll.201200588

38. Austin Suthanthiraraj P. P., Piyasena M. E., Woods T. A., Naivar M. A., Lopez G. P., **Graves S.W.**, One-dimensional acoustic standing waves in rectangular channels for flow cytometry, *Methods* (2012), Volume 57, Issue 3, July 2012, Pages 259-271, ISSN 1046-2023, doi:10.1016/j.ymeth.2012.02.013

37. Piyasena M. E., Austin Suthanthiraraj P. P., Applegate Jr. R.W., †Goumas A. M., †Woods T.A., López G. P., and **Graves S. W.**, Multinode acoustic focusing for parallel flow cytometry. *Anal. Chem.,* 2012, 84 (4), pp 1831–1839

36. Edwards, B. S., Zhu, J., Chen, J., Carter, M. B., Thal, D. M., Tesmer, J. J.G., **Graves, S. W.** and Sklar, L. A. (2012), Cluster cytometry for high-capacity bioanalysis. Cytometry, 81A: 419–429. doi: 10.1002/cyto.a.22039

35. Vuyisich M., Sanders C. K., **Graves S. W.**, Binding and cell intoxication studies of anthrax lethal toxin, MOLECULAR BIOLOGY REPORTS (2012) 2012/5, pp. 1-7 DOI: 10.1007/s11033-011-1401-2

34. Lillo A. M., Ayriss J. E., Shou S., **Graves S. W.**, Bradbury A.R.M and Pavlik P. Development of phage-based scFv antibody reagents for detection of *Yersinia pestis*. *PLOS One (2011) 6 (12), e27756*

33. Marina, O.C., Sanders, C. K., Kaduchak, G., Goddard, G. R., **Graves S. W.**, Acoustic Lysis of Vegetative Bacterial Cells: Method and Device Development, *Analytical Methods,* 2011, 3, 2573-2578

32. Corbitt T. S., Zhou Z, Tang Y, **Graves S. W.**, Whitten D. G., Rapid Evaluation of the Antibacterial Activity of Arylene–Ethynylene Compounds, *ACS Appli. Mater. Interfaces*, 2011, v.3 n.8 p.2938-2943

31. Goddard G. R., Brown L.O., Habbersett R. C., Brady C. I., Martin J. C., **Graves S. W.**, Freyer JP, Doorn, SK. High Resolution Analysis of Individual Surface-enhanced Raman-Active Nanoparticle Spectral Tags in Flow. *JACS,* 2010 v.132 n. 17 p. 6081-6090.

30. Saunders, M.J, Edwards, B.S., Shu, J., Sklar, L.A., **Graves, S.W.**, (October 2010) Microsphere- Based Flow Cytometry Protease Assays for Use in Protease Activity Detection and High- Throughput Screening, *Current Protocols in Cytometry* Unit 13.12. (J.P. Robinson, editor), John Wiley and Sons. **(INVITED ARTICLE)**

29. Deshpande, A., Gans, J., **Graves S. W.**, Green, L., Grigsby, L., Kim, H.B., Kunde, Y., Leonard, P., Mark, J., Vuyisich, M. and White, P. S., A Rapid Multiplex Assay for Nucleic Acid-Based Diagnostics, *Journal of Microbiological Methods,* 2010 v.80 n. 2 p. 155-163

28. Saunders, M. J., **Graves, S. W.,** Sklar, L. A., Oprea, T. I., and Edwards, B. S. High Throughput Multiplex Flow Cytometry Screening for novel Botulinum Neurotoxin type A Light Chain inhibitors, *ASSAY and Drug Development Technologies,* 2010 v.8 n.1 p.37-46

27. Oakey J, Applegate RW, Arellano E, Di Carlo, D., **Graves, S. W.**, Toner, M., Particle Focusing in Staged Inertial Microfluidic Devices for Flow Cytometry, *Anal. Chem.,* May 2010 v.82 n.9 p.3862-3867 **(Co-corresponding author)**

26. Naivar M. A., Wilder M. E., †Woods T. A., Habbersett R. C., **Graves, S. W.**, Development of small and inexpensive digital data acquisition systems using a microcontroller based approach, Cytometry Part A. December 2009; v.71A, n.11, p.915-924

25. Applegate Jr., R. W., Marr D. W. M., Squier J., **Graves S. W**. Particle size limits when using optical trapping and deflection of particles for sorting using diode laser bars. 2009 *Opt. Express* 17, 16731-16738

24. Goddard GR, Houston JP, Martin JC **Graves SW**; Freyer JP, Cellular discrimination based on spectral analysis of intrinsic fluorescence., *Proc. of the SPIE*; 2008 Feb. 7; vol.6859, p.685908-1-10

23. Watson, D. A., Brown, L. O., Graham, D. A., Naivar, M. A., **Graves, S. W.**, Doorn, S. K., Nolan J. P., A flow cytometer for the measurement of Raman spectra. *Cytometry Part A. 2008 Feb;73(2):119-28.*

22. Goddard G.R., Sanders C., Martin J.C., Kaduchak G., **Graves S.W.** Analytical performance of an ultrasonic particle focusing flow cytometer, *Anal. Chem*., 2007. Nov 15;79(22):8740-6.

21. Naivar M.A, Parson J.D., Wilder M.E, Habbersett R.C., Edwards B.S., Sklar L, Nolan J.P., **Graves S.W.,** Martin J.C., Jett J. H., and Freyer, J.P., Open, Reconfigurable Cytometric Acquisition System: ORCAS, Cytometry Part A. NOV 2007; v.71A, no.11, p.915-924.

20. Habbersett R. C., Naivar M.A., Woods T.A., Goddard G.R., **Graves S.W**., Evaluation of the use of a green laser pointer for flow cytometry, Cytometry A. 2007 Oct;71(10):809-17.

19. Edwards, B.S., Young, S. M. , †Saunders M. J., Bologa C., Oprea T. I., Ye R. D., Prossnitz E. R., **Graves S.W.**, and Sklar L.A., High-throughput flow cytometry for drug discovery, *Expert Opin. Drug Discov*. (2007) 2(5):1-12

18. Goddard G, Martin JC, Naivar M, Goodwin PM, **Graves SW**, Habbersett R, Nolan JP, Jett JH. (2006) Single particle high resolution spectral analysis flow cytometry. Cytometry A. Aug;69(8):842-51.

17. Espy, M A; Carr, C; Sandin, J H; Hanson, CJ; Daniels, SG; Matlachov, A N; **Graves, SW**; Ward, M D; Jr, R H Kraus; Fritz, S; Leslie-Pelecky SQUID-Based Bioassay with Magnetic Particles in Flow. Journal of Physics: Conference Series Volume: 43, Issue: 1, June 01, 2006, pp. 1254-1257

16. Deshpande A, Hammon RJ, Sanders CK, **Graves SW**. (2006) Quantitative analysis of the effect of cell type and cellular differentiation on protective antigen binding to human target cells. *FEBS Lett*. Jul 24;580(17):4172-5.

15. Saunders MJ, Kim H, Woods TA, Nolan JP, Sklar LA, Edwards BS, **Graves SW** (2006). Microsphere-based protease assays and screening application for lethal factor and factor Xa. Cytometry A. May;69(5):342-52.

14. Goddard G, Martin JC, **Graves SW**, Kaduchak G. (2006) Ultrasonic particle-concentration for sheathless focusing of particles for analysis in a flow cytometer. Cytometry A. Feb;69(2):66-74.

13. Woods, T.A., **Graves, S.W.**, Nolan J.P., (2005) Protein surface concentration measurements using flow cytometry. *Current Protocols in Cytometry* Unit 13.2. (J.P. Robinson, editor), John Wiley and Sons. **(INVITED ARTICLE)**

12. **Graves, S.W.** Nolan, J. P. Sklar, L. A., (2005) Molecular Assemblies, Probes, and Proteomics in Flow Cytometry – in Flow Cytometry for Biotechnology (L. A. Sklar, editor) Oxford University Press, New York, New York.

11. **Graves, S. W.**, Woods, T. A., †Kim, H., Nolan, J. P. (2005) Direct fluorescent staining and analysis of proteins on microspheres using CBQCA, Cytometry, 65A (1), 50-58.

10. Chigaev A., Zwartz G., **Graves S. W.**, Dwyer D. C., Tsuji H., Foutz T. D., Edwards B. S., Prossnitz E. R., Larson RS, Sklar LA. (2003) Alpha4beta1 integrin affinity changes govern cell adhesion. J Biol Chem. Oct 3;278(40):38174-82.

9. Kraus, R.H., Espy, M.A., Matlachov, A.N., Matsson, T.J., Carr, C., Martin, J.C., Nolan, J.P., **Graves, S.W.,** Bergstrom, A.C., Ward, M.D., Grodzinski, P., Bioassay with magnetic particles in flow: a method for highly parallel molecular separations of complex biological systems. *EUCAS 2003 Proceedings*.

8. Sklar, L.A., Edwards, B., **Graves, S.W.**, Nolan J.P,, Prossnitz, E (2002) Flow cytometric analysis of ligand-receptor interactions and molecular assemblies. *Annual Review*

of Biophysics and Biomolecular Structure 31:97-119. **(INVITED ARTICLE)**

7. **Graves, S.W**., R.C. Habbersett, J.P. Nolan (May 2002) Dynamic thermoregulation of the sample in flow cytometry. *Current Protocols in Cytometry*, Unit 1.18 (J.P. Robinson, editor), John Wiley and Sons. **(INVITED ARTICLE)**

6. **Graves, S. W**., Nolan, J. P., Jett, J. H., Martin, J. C., and Sklar, L.A. (2002) Nozzle design parameters and their effects on rapid sample delivery in flow cytometry. *Cytometry* 47(2):127-37

5. **Graves, S.W.**, Habbersett, R.C. and Nolan, J.P. (2001) A dynamic inline sample thermoregulation unit for flow cytometry. *Cytometry,* 43(1), 23-30

4. Patterton, H.G. and **Graves, S**. (2000) DNAssist: the integrated editing and analysis of molecular biology sequences in Windows. *Bioinformatics,* 16(7) 652-653

3. Patterton, H.G. and **Graves, S.** (2000) DNAssist, a C++ program for editing and analysis of nucleic acid and protein sequences on PC-compatible computers running Windows 95, 98, NT4.0 or 2000. *Biotechniques,* 28(6) 1192-1197

2. Johnson, A.A., Tsai, Y., **Graves S.W**. and Johnson, K.A. (2000) Human mitochondrial DNA polymerase holoenzyme: Reconstitution and characterization. *Biochemistry,* 39(7), 1702-1708

1. **Graves S.W**., Johnson A.A. and Johnson K.A. (1998). Expression, purification, and initial kinetic characterization of the large subunit of the human mitochondrial DNA polymerase. *Biochemistry*, 37(17) 6050-6058.

PATENTS

Issued patents

8. Signal propagation biomolecules, devices and methods. Carl Brown III, **Steven Wayde Graves**, Darko Stefanovic, Matthew Richard Lakin. US 9476090. Issued October 25, 2016.

7. Spatially correlated light collection from multiple sample streams excited with a line focused light source. **Steven W. Graves**, Pearlson Prashanth Austin Suthanthiraraj, Andrew P. Shreve, Gabriel P. Lopez. US 9274042 B2. Issued March 1, 2016.

6. Multinode acoustic focusing for parallel flow cytometry analysis applications, **Steven W. Graves**, S.D. Menake E. Piyasena, Gabriel P. Lopez, Robert Applegate, Jr. Patent number: US 9074977 B2 Issued July 7, 2015. This is a continuation in part patent with additional claims beyond that of patent 8,830,451 B1. Issued July 7, 2015.

5. Multinode acoustic focusing for parallel flow cytometry analysis applications, **Steven W. Graves**, S.D. Menake E. Piyasena, Gabriel P. Lopez, Robert Applegate, Jr. Patent number: 8,830,451 B1. Issued September 9th, 2014.

4. Synthesis of Stable Elastomeric Negative Acoustic Contrast Particles, Gabriel P. Lopez, Nicholas Carrol, Dimeter Petsev, Kevin Cushing, **Steven W. Graves***. Patent 8,658,734. Issued February 25th, 2014. *Due to an error in the initial filing I was added as an inventor at a later date. This correction is in process but my name may not show in the data base as of yet.

3. Method for non-contact particle manipulation and control of particle spacing along an axis, Gregory R. Goddard, Gregory Kaduchak, James H Jett, **Steven W. Graves**. Patent number: 8,263,407. Issued September 11th, 2012.

2. System and Method for Measuring Particles in a Sample Stream of a Flow Cytometer or

the Like, **Steven W. Graves** and Robert C. Habbersett. Patent number: 7,835,000. Issued November 16th, 2010.

1. Ultrasonic analyte concentration and application in flow cytometry, Gregory Goddard, Gregory Kaduchak, John C. Martin, **Steven W. Graves**, Gary C. Salzman, Dipen Sinha. Patent number: 7,340,957. Issued March 4th, 2008

AWARDS AND HONORS

2016	Invited to contribute talk to the Dick Keller Memorial Symposium 252nd ACS National Meeting to be held 21-25 August 2016 in Philadelphia, PA.
2014	Chosen as Faculty Opponent for Ph.D. Thesis Defense (12/5/2014). Department of Biomedical Engineering, Lund University, Lund Sweden.
2014	Inclusion on STC.UNM Calendar as inventor of the month – February, 2014.
2012	Department of Chemical and Nuclear Engineering Nominee for the UNM Junior Research Excellence Award
2011	Plenary Speaker – International Society for Advancement of Cytometry (ISAC) 2011 26th Congress (Cyto2011)
2009	Federal Laboratory Consortium Award for Excellence in Technology Transfer, Portable Acoustic Cytometer
2008	Distinguished Patent Award for "Ultrasonic Analyte Concentration and Application in Flow Cytometry", Los Alamos National Laboratory
2008	Northern New Mexico Regional Economic Impact Award, Technology Transfer Division, Los Alamos National Laboratory
2007	R&D 100 Award for the development of the Portable Acoustic Cytometer
2007	Certificate of Appreciation for Outstanding Service to the International Society for the Advancement of Cytometry (Data Standards Committee).
2004	Certificate of Appreciation for efforts on Project Looking Glass, Awarded by the CTO of the Intelligence Community.
2004	Bioscience Division Employee Award for Outstanding Achievement
2001	Bioscience Division Employee Award for Outstanding Achievement with the National Flow Cytometry Resource Team
1992-1995	NIH Pre-Doctoral Research Fellowship

PROFESSIONAL SERVICE AND ACTIVITIES

PROFESSIONAL SERVICE

2016	NIH EBIT Study section, February Meeting
2015	NIH ISD Study section, October Meeting
2015	Cyto2015 Program Committee, Glasgow, Scotland
2015	Chair of Parallel Session on CELL SORTING, CHIP CYTOMETRY, FLUIDICS at Cyto2015, Glasgow, Scotland
2015	ISD Study Section Ad-Hoc Member. 10/2015 meeting
2014	Member, International Society for Advancement of Cytometry (ISAC) 2015

	30th Congress (Cyto2015) Program Committee
2014	NIH Study Section member for the Single Cell Analysis Program (SCAP) ZRG CBR 50 Review Panel, July 7th, 2014
2013	Session Chair, Ligand Receptor Dynamics, International Society for Advancement of Cytometry (ISAC) 2013 28th Congress (Cyto2013), San Diego, CA USA, May 22, 2013
2013	Workshop on Trends in Flow Cytometry Instrumentation, International Society for Advancement of Cytometry (ISAC) 2013 28th Congress (Cyto2013), San Diego, CA USA, May 21, 2013
2013	Member, International Society for Advancement of Cytometry (ISAC) 2014 29th Congress (Cyto2014) Program Committee
2012	Session Chair, Cell Handling, Ultrasonic Standing Wave Network (USWNet) 2012 Conference, September 21-22, Lund, Sweden
2012	Session Chair, Cytometry Technology: Microsystems, International Society for Advancement of Cytometry (ISAC) 2012 27th Congress (Cyto2012) Program Committee
2012	Member, International Society for Advancement of Cytometry (ISAC) 2012 28th Congress (Cyto2013) Program Committee
2011	Member, International Society for Advancement of Cytometry (ISAC) 2012 27th Congress (Cyto2012) Program Committee
2011	Ad Hoc Member, International Society for Advancement of Cytometry (ISAC) Strategic Planning Team at Cyto2011
2011	UNM Co-Lead for the 34th Annual Course on Flow Cytometry, University of New Mexico, Albuquerque, NM
2011	NIH F08 Study Section member (March meeting)
2011	NIH Biomedical Technology ZRR-BT(7) Study Section (February Meeting)
2010	Member, International Society for Advancement of Cytometry (ISAC) 2011 26th Congress (Cyto2011) Program Committee
2010	Session Chair, Cytometry Technologies (Parallel Session 17) International Society for Advancement of Cytometry (ISAC) 2010 25th Congress
2010	NIH IMST-15 Study Section member (March meeting)
2010	NIH F14 Study Section member (March meeting)
2009	Member, International Society for Advancement of Cytometry (ISAC) 2010 25th Congress Program Committee
2009	UNM Lead for the 32nd Annual Course on Flow Cytometry, University of New Mexico, Albuquerque, NM
2009	NIH S10 Study Section for Shared Instrumentation Committee
2009	NIH IMST-15 Study Section member
2008	Member, International Society for Advancement of Cytometry (ISAC) 2008 Congress Program Committee
2008	NIH ISD Study Section member
2007	Co-Organizer for the 30th Annual Flow Cytometry Course, June 2007, Los Alamos, NM
2007 – 2008	Member, Los Alamos National Laboratory LDRD-DR strategy team tasked with reviewing about $25M worth of internal proposals per year.

2006 – 2008	Member, LANL Bioscience Division Post-Doctoral Conversion Committee
2006	Session Lead: Future of Biodetection Systems Workshop, October 2006, Santa Fe, NM
2005	Laboratory presenter, 28th Annual Flow Cytometry Course, June 2005, Los Alamos, NM
2004 – 2009	Recurring Member, NIH peer review GGG-J study section
2004 – 2006	Member, ISAC Data Standards Committee
2003	Laboratory presenter, 26th Annual Flow Cytometry Course, June 2003, Los Alamos, NM
1999-2003	Member, Association for Laboratory Automation
1993-1995	Graduate Representative for the Biochemistry, Microbiology and Molecular Biology department at the Pennsylvania State University
1998 – Present	Reviewer Services to Journals - Analytical Chemistry, Biochemistry, Cytometry, Cytometry: Part A, Journal of the Royal Society: Interface, Lab on a Chip, Langmuir, Optics Express, Proceedings of the National Academy of Sciences (USA) and several other journals.

PROFESSIONAL MEMBERSHIPS

2011 – Present	Member, International Society for Nanoscale Science, Computation, and Engineering
2009 – Present	Member, American Institute for Chemical Engineering
2002 – Present	Member, International Society for the Advancement of Cytometry
1999 – Present	Member, American Association for the Advancement of Science

PRESENTATIONS AT PROFESSIONAL CONFERENCES AND SYMPOSIA

INVITED PROGRAM PRESENTATIONS AT CONFERENCES

3. Efficient biomedical diagnostics: flowing from standing waves to molecular circuits, the Dick Keller Memorial Symposium 252nd ACS National Meeting to be held 21-25 August 2016 in Philadelphia, PA.
2. Microfluidic Acoustic Flow Cytometry: A Pathway to Point-of-Care and High-Speed Parallel Cellular Diagnostics. Invited program speaker at the Gordon Research Conference: Microfluidics, Physics & Chemistry of. 06/09/2013 - 06/14/2013, Tuscany, Italy.
1. Acoustic and Inertial Flow Cytometry: Pathways to point-of-care and high-speed parallel cellular diagnostics. Plenary Speaker at the Annual Meeting for the 26th International Society for the Advancement of Cytometry (ISAC), Baltimore, MA. May 22nd, 2011.

INVITED PRESENTATIONS

27. Microfluidic Acoustic Flow Cytometry: A Pathway to Point-of-Care and High-Speed Parallel Cellular Diagnostics. April 5th, 2015. Biomedical Engineering Department, Pennsylvania State University, University Park, PA

26. Efficient biomedical diagnostics: flowing from standing waves to molecular circuits. December 4th, 2014. Department of Biomedical Engineering, Lund University, Lund, Sweden.

25. Microfluidic Acoustic Flow Cytometry: A Pathway to Point-of-Care and High-Speed Parallel Cellular Diagnostics. October 10th, 2014. Chemistry Department, New Mexico Tech, Socorro, NM

24. Flow Cytometry: A tool for cellular and molecular assembly analysis. A short course in flow cytometry. (Six lectures that each were 2 hours in duration). June – July, 2013, University of Eastern Piedmont, Novara, Italy

23. Microfluidic Acoustic Flow Cytometry: A Pathway to Point-of-Care and High-Speed Parallel Cellular Diagnostics. Trends in Cytometry Instrumentation Workshop. May 21st, 2013. Cyto2013 Conference, San Diego, CA.

22. Flow Cytometry in New Mexico: Past, Present, Future. New Mexico Consortium Workshop for NMC/LANL Biology Initiative. May 9th, 2013. Los Alamos, NM

21. Microspheres and Flow Cytometry as a Platform for Protease Assays in High-Throughput Screening and Protease Kinetic Analysis. High-throughput screening workshop. June 25th, 2012. Cyto2012 Conference, Leipzig, Germany.

20. Acoustic and Inertial Flow Cytometry: Pathways to point-of-care and high-speed parallel cellular diagnostics. Biomedical Engineering Departmental Seminar, Duke University, October 13th, 2011. Durham, NC.

19. Nanometer to millimeter sized particles in flow based analysis, Sandia/UNM Symposium on Nanoparticle Human Interactions: June 02 & 03, 2011. Albuquerque, NM

18. Acoustic and Inertial Flow Cytometry: Pathways to point-of-care and high-speed parallel cellular diagnostics. Center for Non-Linear Studies, Los Alamos National Lab, Los Alamos, NM. March 7th, 2011

17. Engineering solutions for critical world health applications, IEEE Photonics Society Los Angeles Chapter at the University of California, Los Angeles, Electrical Engineering Department. Los Angeles, CA, November, 7th, 2010.

16. Engineering solutions for critical world health applications. INCBN-IGERT Seminar, University of New Mexico, October 18th, 2010.

15. Engineering solutions for critical world health applications, Chemical Engineering Departmental Seminar, New Mexico State University, Las Cruces, NM October 7th, 2010

14. Development of Custom Flow Cytometry Instrumentation, Invited Workshop at Cyto2010, the Annual Meeting for the International Society for the Advancement of Cytometry (ISAC), Seattle, WA. May 8-12, 2010.

13. The Future of Flow Cytometry Instrumentation, 32nd Annual Research Course in Flow Cytometry, The University of New Mexico, Albuquerque, New Mexico, May 30-June 5, 2009

12. Bringing the power of flow cytometry to critical applications in the clinic and biomedical research. The CINT Seminar Series, January 2009. Los Alamos National Laboratory, Los Alamos, NM.

11. Miniaturization and parallelization efforts to reduce diagnostic costs and increase the analytical capabilities of flow based instrumentation, BD Biosciences Seminar, April 30th, 2008. San Jose, CA.

10. Low Cost Portable Flow Cytometry for Diagnosis and Detection in Resource Limited Settings. Bio-Security Science Workshop, Sponsored by the LANL Center for Bio-

Security Science, December 13-14th, 2007. Los Alamos National Laboratory, Los Alamos, NM

9. Low-cost portable flow cytometry. Fall 2007 Seminar Series in the Chemical Engineering Department, September 7, 2007. Colorado School of Mines, Golden, CO.

8. Measurement and analysis of nano scale materials by flow cytometry. 1st Annual Symposium: Integrating Nanotechnology with Cell Biology and Neuroscience, August 15, 2007, The University of New Mexico.

7. New Developments in Flow Cytometry Instrumentation, 30th Annual Research Course in Flow Cytometry, June 9-15, 2007, The National Flow Cytometry Resource, Los Alamos National Laboratory, Los Alamos, NM

6. A chip based flow cytometer. Flow Cytometry for Exploration Missions – A workshop by Wyle Laboratories and NASA/Johnson Space Center. November 5th, 2004

5. Molecular Assembly Analysis by Flow Cytometry, La Jolla Bioengineering Institute, La Jolla, CA. September 2004

4. Flow cytometry as a platform for analysis and discovery of molecular assemblies for bio-defense and biomedical applications, Biochemistry Department, The University of New Mexico, August 2004

3. Rapid Mix and High Throughput Flow Cytometry (Lecture and Laboratory Session) 26th Annual Research Course in Flow Cytometry, The National Flow Cytometry Resource, Los Alamos National Laboratory, Los Alamos, NM June 2003

2. Flow cytometry as a platform for analysis and discovery of molecular assemblies, Great Lakes International Imaging and Flow Cytometry Association GLIIFCA, "CellEFTA" 20 years of Immunophenotyping, from OKT-4 Receptors to Cytonomics, Detroit, MI, October 4 - 6, 2002

1. Cloning, Expression, and Kinetic Analysis of the Large Subunit of Human Mitochondiral DNA polymerase. Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM. June 1999.

RESEARCH GRANTS, CONTRACTS, AND PENDING PROPOSALS AT UNM

- 9 active grants from sponsors that include the NIH (2), NSF (3), USDA (1), and DTRA (1)
- $2,965,216 in active funding
- $837,571 in research expenditures for the calendar year of 2015
- 20 funded grants since joining UNM in 2008, sponsors include NIH, NSF, USDA, DTRA, DOD
- $5,655,816 in total funding since joining UNM in 2008

UNM ACTIVITIES AND SERVICE

2014 – Present	School of Engineering Faculty Assembly Advisory Committee
2014	Special Assistant to the Dean, Health Sciences Center Relations
2014	Associate Dean for Research, School of Engineering
2012 – Present	Chemical and Biological Engineering Faculty Representative on the UNM Chemical Safety and Hygiene Committee
2010 – 2014	Director of the Biomedical Engineering Graduate Program
2009 – 2014	Chair, ChNE Safety Committee
2009 – 2014	Member of the Chemical Engineering Graduate Admission Committee

2009 – 2011	Led the approval effort for the Biomedical Engineering Program at UNM
2009 – Present	Advisor for 5 to 10 ChE undergraduate students
2008 – 2010	Assisted with AIChE student association as faculty advisor
2008	Presented the BME graduate program at the Fall 2008 SOE Faculty Meeting
2008 – 2010	Assisted in developing the BME graduate program
2008 – 2011	Associate Director of the CBME with responsibilities and oversight of budget, planning, and organizational functions including supervision of administrative staff.