

CURRICULUM VITAE
Denise G. Wingett, Ph.D.

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Education:

Ph.D.	1991	Washington State University, Biochemistry
M.S.	1989	Washington State University, Biochemistry
B.S.	1986	Boise State University, Chemistry

Academic Appointments:

2010-present	Professor and Chair, Department of Biological Sciences, Boise State University
2007-2010	Associate Professor and Associate Chair, Department of Biological Sciences, Boise State University
2007	Graduate Studies Coordinator, Department of Biological Sciences, Boise State University
2006-present	Affiliate Faculty, Department of Medicine, Division of Gerontology and Geriatric Medicine, University of Washington School of Medicine
2003-2007	Assistant Professor, Department of Biology, Boise State University
2002-2006	Research Assistant Professor, Department of Medicine, Division of Gerontology and Geriatric Medicine, University of Washington School of Medicine
1998-present	Research Associate, Mountain States Tumor and Medical Research Institute, Boise, ID

Relevant Experience:

1998-2004	Medical Research Scientist, Boise VA Medical Center
1995-1998	Assistant Medical Research Scientist, Boise VA Medical Center
1994-1995	Research Assistant Professor, Neuroimmunology Department, Portland VA Medical Center/Oregon Health Sciences University
1992-1994	Post-doctoral Fellow, Washington State University, with Dr. Nancy Magnuson
1986-1991	Doctoral Student, Washington State University, with Dr. Raymond Reeves

PART I - TEACHING

Formal Courses Taught

Boise State University (2003-present)

Cell Biology - Biol 301

Immunology - Biol 420/420G

Bioinformatics - Biol 446/546

Immunology Laboratory –Biol 497/597

Infection and Immunity - Biol 498/598

Advanced Topics in Immunology - Biol 497/597

Introduction to Bioinformatics - Biol 297

Advanced Topics in the Biology of Cancer & Immunology - Biol 466/566

Flow Cytometry Techniques – Biol 497/597

Washington State University (Fall 1993)

Immunology - Micro 412/512

Graduate Student Advising

Major Advisor:

Janet Layne (graduated 2011)

Ashley Masterson (graduated 2010)

Cory Hanley (graduated 2009)

Alma Hodzic (graduated 2007)

Kelli Matthies (graduated 2006)

Mark Headley (graduated 2005)

Panayiota Louka – current student

Graduate Committee Member:

Charlene Creech (graduated 2009)

Amanda Bruesch (graduated 2007)

Eric Hallingstad (graduated 2007)

Peter Mouser (graduated 2006)

Mike Butler (graduated 2006)

Chadwick Davis – current student

David Chang – current student

Katie Irwin – current student

PART II-RESEARCH

Referred Publications

1. Wyatt CR, **Wingett D**, White JS, Buck CD, Knowles D, Reeves D, and Magnuson NS: Persistent infection of rabbits with bovine leukemia virus associated with development of immune dysfunction. *J Virol* **63** :4498-4506, 1989.
2. **Wingett D**, Reeves R, and Magnuson NS: Stability changes in *pim-1* proto-oncogene mRNA following mitogen stimulation of normal lymphocytes. *J Immunol* **147**: 3563-3659, 1991.
3. **Wingett D**, Reeves R, and Magnuson NS: Characterization of the testes-specific *Pim-1* transcript in rat. *Nucleic Acids Res* **20**: 3183-3189, 1992.
4. **Wingett D**, Stone D, Davis WC, and Magnuson NS: Expression of the *pim-1* proto-oncogene:

- Differential inducibility between alpha/beta and gamma/delta-T cells and B cells. *Cell Immunol* **162**:123-130, 1995.
5. **Wingett D**, and Magnuson NS: *Pim-1* proto-oncogene expression in anti-CD3-mediated T cell activation is associated with protein kinase C activation and is independent of raf-1. *J Immunol* **156**: 549-557, 1996.
 6. Whitham RD, **Wingett D**, Wineman J, Mass M, Wegmann K, Vandenbark A, and Offner H: Treatment of relapsing autoimmune encephalomyelitis with T cell receptor V beta-specific antibodies when proteolipid protein is the autoantigen. *J Neurosci Res* **45**: 104-116, 1996.
 7. **Wingett D**, Forcier K, and Nielson CP: Glucocorticoid-mediated inhibition of RANTES expression in human T lymphocytes. *Febs Lett* **398**:308-311, 1996.
 8. Hoover DS, **Wingett D**, Zhang J, Reeves R, and Magnuson NS: *Pim-1* protein expression is regulated by its 5'-untranslated region and translation initiation factor eIF-4E. *Cell Growth Diff* **8**: 1371-1380, 1997.
 9. **Wingett D**, Vestal RE, Forcier K, Hadjokas N, and Nielson CP: CD40 is functionally expressed on human breast carcinomas: Variable inducibility by cytokines and enhancement of Fas-mediated apoptosis. *Breast Cancer Res Treat* **50**: 27-36, 1998.
 10. **Wingett D**, Forcier K, and Nielson CP: Regulation of CD40L expression by cyclic AMP: Contrasting proinflammatory and inhibitory actions. *Cell Immunol* **192**: 203-212, 1999.
 11. **Wingett D**, Forcier K, and Nielson CP: A role for CD99 in T cell activation. *Cell Immunol* **193**:17-23, 1999.
 12. Nielson CP, and **Wingett D**: Endothelial cell and cAMP regulation of T cell CD40: Relevance of CaMKIV signaling. *Immunol* **105**: 430-440, 2002.
 13. **Wingett D**, and Nielson CP: Cyclic AMP differentially modulates CD40L expression on human naive and memory CD4⁺ T cells. *Biochem Pharm* **64**: 1169-1178, 2002.
 14. **Wingett D**, and Nielson CP: Divergence in NK cell and cyclic AMP regulation of T cell CD40L expression in asthmatic subjects. *J Leuk Biol* **74**: 531-541, 2003.
 15. Nielson C, and **Wingett D**: Intensive care and invasive ventilation in the elderly patient, implications of chronic lung disease and comorbidities. *Chron Respir Dis* **1**: 43-54, 2004.
 16. Matthies KGM, Hodzic A, and **Wingett D**: Differential regulation of soluble and membrane CD40L protein in T cells. *Cell Immun* **241**: 47-58, 2006.
 17. Olson RD, Headley MB, Walsh GM, and **Wingett D**: In vitro and in vivo immunosuppressive activity of a novel anthracycline, 13-deoxy, 5-iminodoxorubicin. *International Immunopharmacology*, **7**: 734-743, 2007.
 18. Reddy KM, Feris K, Bell J, **Wingett DG**, Hanley C, and Punnoose A: Selective toxicity of zinc oxide nanoparticles to prokaryotic and eukaryotic systems. *Applied Physics Letters*, **90**: 213902, 2007.
 19. Hanley C, Layne J, Punnoose A, Reddy KM, Coombs I, Coombs A, Feris K, and **Wingett D**: Preferential killing of cancer cells and activated human T cells using zinc oxide nanoparticles, *Nanotechnology*, **19**: 295103, 2008.
 20. Wang H, **Wingett D**, Engelhard ME, Feris K, Reddy KM, Turner P, Layne J, Hanley C, Bell J, Tenne D, Wang C, and Punnoose A: Fluorescent dye encapsulated ZnO particles with cell-specific toxicity for cancer treatment and bio-medical applications. *Journal of Material Science: Materials in Medicine*, **20**: 11-22, 2009.

21. Hanley C, Thurber, A, Hanna C, Punnoose A, Zhang J, and **Wingett D**: The influences of cell type and ZnO nanoparticle size on immune cell cytotoxicity and cytokine induction. *Nanoscale Research Letters*, **4**: 1409-1420, 2009.
22. Feris K, Otto C, Tinker J, **Wingett D**, Punnoose A, Thurber A, Quinn B, Hanna C, and Pink A: Electrostatic interactions affect nanoparticle-mediated toxicity to the Gram negative bacterium *Pseudomonas aeruginosa* PAO1, *Langmuir*, **26**: 4429-4436, 2010.
23. Rasmussen JW, Martinez E, Louka P, and **Wingett D**: Zinc oxide nanoparticles for selective destruction of tumor cells and potential for drug delivery applications. *Expert Opinion on Drug Delivery*, **7**: 1063-1077, 2010.
24. Zhang J, Thurber A, Tenne D, Rasmussen JW, **Wingett D**, Hanna C, and Punnoose A: Enhanced dye fluorescence in novel dye-ZnO nano-composites. *Advanced Functional Materials*, **20**: 4358, 2010.
25. Thurber A, **Wingett DG**, Rasmussen JW, Layne J, Johnson L, Tenne DA, Zhang, J, Hanna CB, and Punnoose A: Improving the selective cancer killing ability of ZnO nanoparticles using Fe doping. *Nanotoxicology*, epublished ahead of print, 2011.

Other Publications (selected)

1. Carter J, **Wingett D**, Reeves R, and Magnuson NS: A rabbit model for lymphotropic retrovirus infection. *FASEB J* 2:A529, 1988.
2. **Wingett D**, Reeves R, and Magnuson N: Involvement of the *pim-1* proto-oncogene in erythroid differentiation and lymphocyte activation. *FASEB J* 4671, 1991.
3. Hoover DS, **Wingett D**, Reeves R, and Magnuson N. Multiple levels of *Pim-1* kinase regulation in hematopoietic cells. *J Cell Biol* BZ 333:269, 1993.
4. **Wingett D**, Reeves R, and Magnuson NS: Transcriptional and post-transcriptional regulation of *pim-1* gene expression in hemato-lymphoid cells. *J Cell Bio* B435: 133, 1993.
5. Olson RD, Headley MB, Walsh GM, and **Wingett D**: Immunosuppressive properties of a novel anthracycline analog. Frontiers of Clinical Investigation Symposium, *Autoimmunity*: P 28, 2005.
6. Matthies KMG, and **Wingett D**: Differential regulation of soluble and membrane CD40L protein in T cells: implication of ADAM-10. Inflammation in Chronic Disease, *Days of Molecular Medicine 2006*: P138, 2006.
7. Hanley C, Reddy KM, Feris K, Layne J, Punnoose A, **Wingett D**: Evaluating toxicity of metal oxide nanoparticles and their potential utilization in treatment of autoimmune disease. *American Association for the Advancement of Science (AAAS), Pacific Division, 88th Annual Meeting*, Boise, ID, June 17-21 2007.
8. Layne J, Feris K, Reddy KM, Hanley C, Punnoose A, **Wingett D**: Susceptibility of cancer cells to ZnO nanoparticle toxicity-potential utility for treatment of cancer. *American Association for the Advancement of Science (AAAS), Pacific Division, 88th Annual Meeting*, Boise, ID, June 17-21 2007.
9. Masterson A, Hodzic A, **Wingett D**: Molecular mechanisms controlling CD40L gene expression: Implications in asthma. *American Association for the Advancement of Science (AAAS), Pacific Division, 88th Annual Meeting*, Boise, ID, June 17-21 2007.
10. Feris K, Bell J, Reddy KM, **Wingett D**, Hanley C, Layne J, Punnoose A: Selective toxicity of zinc oxide nanoparticles to gram-positive and gram-negative bacterial systems. *The American*

Society for Microbiology, 107th General Meeting in the Metro Toronto Convention Centre in Toronto, Canada, May 21-25 2007.

11. Feris K, Bell J, Reddy KM, Coombs I, Wang H, Hanley C, Punnoose A, **Wingett D**: Antimicrobial effects and mechanisms of toxicity of metal oxide nanoparticles. *American Association for the Advancement of Science (AAAS), Pacific Division, 88th Annual Meeting, Boise, ID, June 17-21 2007.*
12. **Wingett D**, Feris K, Hanley C, Reddy KM, Wang H, Punnoose A: Evaluation of potential toxicity issues and nanomedicine based applications of ZnO nanoparticles. *Keystone Symposium "Nanotechnology in Biomedicine", Feb 11-16, Tahoe City, CA 2007.*
13. Masterson A, and **Wingett D**: Air quality and you: The role of diesel exhaust particles in immune system activation. *National Science Foundation GK-12 Annual Meeting, March 29, Washington DC, 2009.*

Patents

1. **Wingett D**, Punnoose A, Reddy KM. Preferential killing of cancer cells and activated human T-cells using the selective toxicity of zinc oxide nanoparticles. Patent Pending. US Patent Application No. 60/974,460, and PCT Patent Application No. PCT/US08/077252, 2008.
2. Wang H, Punnoose A, **Wingett D**, Reddy KM, Feris K. Dye encapsulated fluorescent ZnO particles with cell-specific toxicity for cancer treatment and bio-medical applications. Patent Pending, US Patent Application No.60/974,461, and PCT Patent Application No. PCT/US08/77284, 2008.

Research Funding

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| 2010-2011 | Idaho State Board of Education: Development of a Biomolecular Immunology Lab Course: Integrating Advanced Technology, Bioinformatics, and 3-D Molecular Visualization (\$19,800), Principal Investigator. |
| 2010-2013 | National Institutes of Health/National Cancer Institute: Preferential cytotoxic actions of metal oxide nanoparticles against cancer (\$211,500), Principal Investigator. |
| 2009-2010 | Idaho State Board of Education: Development of a Biomolecular Immunology Lab Course (\$104,800), Principal Investigator. |
| 2009-2011 | Department of Defense: Development of a West Nile Vaccine (\$960,000 ; total award), Co-Principal Investigator. |
| 2009-2011 | Department of Defense: DNA Safeguard (\$96,944 ; total award), Co-Principal Investigator. |
| 2009-2012 | National Science Foundation: MRI: Acquisition of an LC-MS for multidisciplinary research and education (\$676,964 ; total award), Co-Principal Investigator. |

2008-2011 National Science Foundation: MRI: Acquisition of a FACS to support collaborative research and education in biomolecular sciences and nanomaterials applications (**\$503,775**), Principal Investigator.

2008-2010 Mountain States Tumor and Medical Research Institute: Utility of zinc oxide nanoparticles for selective cancer cell killing (**\$5,000**), Principal Investigator.

2007-2008 Mountain States Tumor and Medical Research Institute: Feasibility of nanomedicine based approaches for treatment of autoimmune disease (**\$5,000**), Principal Investigator.

2005-2009 National Institutes of Health: Altered cAMP regulation of CD40L in asthma, grant #1R15 AI06277-01A1 (**\$195,696**), Principal Investigator.

2005-2006 National Institutes of Health: Utility of a novel anthracycline analog in psoriasis, grant #1R43 AR052955-01 (**\$146,172**), Principal Investigator.

2005-2006 Boise State University Faculty Research Associates Program (**\$5,000**), Principal Investigator.

2005-2006 Mountain States Tumor and Medical Research Institute: Regulation of T cell CD40L gene expression (**\$5,000**), Principal Investigator.

2005-2006 Boise State University Faculty Research Grant: Molecular mechanisms relevant to asthma that dysregulate CD40L (**\$5,000**), Principal Investigator.

2004-2008 Gem Pharmaceuticals, LLC: Comparison of the dermatologic activities of Doxorubicin, GPX-100 and GPX-150 (**\$6,024**), Principal Investigator.

2004-2005 Mountain States Tumor and Medical Research Institute: Identification of differentially expressed proteins on a regulatory NK cell subset in asthma (**\$5,000**), Principal Investigator.

2004-2005 Boise State University Faculty Research Grant: Identification of molecular mechanisms leading to elevated CD40L protein in asthma (**\$5,000**), Principal Investigator.

2003-2004 Mountain States Tumor and Medical Research Institute: Involvement of CD40L/CD40 interactions in Alzheimer's disease (**\$5,000**), Principal Investigator.

2003-2004 Idaho Biomedical Research Infrastructure Network Program of NIH, National Center for Research Resources: Seed Grant, Functional and phenotypic characterization of a novel asthma-associated NK cell subset (**\$25,000**), Principal Investigator.

2003-2004 Idaho Biomedical Research Infrastructure Network Program of NIH, National Center for Research Resources: Equipment supplement for NIH-BRIN seed grant proposal (**\$56,222**), Principal Investigator.

2002-2003 Mountain States Tumor and Medical Research Institute: Involvement of novel NK cell subpopulations in asthma (**\$5,000**), Principal Investigator.

2001-2004 Department of Veterans Affairs: Altered cAMP regulation of CD40L in asthma (**\$472,700**), Principal Investigator.

- 2002-2003 Mountain States Tumor and Medical Research Institute: Involvement of novel NK cell subpopulations in asthma (**\$5,000**), Principal Investigator.
- 1998-2001 Department of Veterans Affairs: Aberrant cAMP regulation of T cell CD40L expression in asthma (**\$343,000**), Principal Investigator.
- 1998-2000 Expedition Inspiration: CD40 expression in breast cancer: Involvement in cytotoxicity and immune enhancement (**\$15,000**), Principal Investigator.
- 1996-1997 Mountain States Medical Research Institute: CD40 signaling in breast and prostate carcinoma cells (**\$10,000**), Principal Investigator.

Awards

- 2008 Health Care Hero Honoree, Educator Category, Idaho Business Review
- 2008 Women of the Year, Idaho Business Review
- 2008 Women Making Herstory Award, Boise State University Women's Center
- 1993-1995 National Research Service Award, Department of Health and Human Services, Washington State University

Membership in professional organizations

- American Association for the Advancement of Science, Associate Member
- American Association for Cancer Research, Associate Member
- American Association for Immunologists, Associate Member
- Sigma Xi Scientific Research Society, Full Member

PART III-SERVICE

Professional Service

Professional Committee Involvement

- 2009 Study Section (ad hoc), Center for Scientific Review SBIR/STTR, Small Business: Arthritis, Connective Tissue and Skin (ACTS), NIH
- 2005-2010 Council Board Member, Mountain States Tumor and Medical Research Institute, St. Luke's Hospital, Boise, ID
- 2004-2006 Member, Central Idaho Asthma Coalition
- 2001-2002 Member of University Washington Human Subjects Review Committee (IRB), Seattle, Washington
- 2001-2003 Member of Research and Development Committee, Boise VAMC
- 2000-2001 Chairperson of Research and Development Committee, Boise VAMC
- 2000-2001 Chairperson of Scientific Review Subcommittee, Boise VAMC
- 1999-2005 Chairperson of Hospital Radiation Safety Committee, Boise VAMC
- 1998 Acting Cancer Section Head, Mountain States Medical Research Institute, Boise, ID

Institutional Service

University Committees

- 2007-present Member, Biomolecular Sciences Ph.D. Curriculum Committee, BSU
- 2007-2009 Member, University Patent Committee, BSU
- 2007-2009 Member, University Top-Ten Scholars Selection Committee, BSU

- 2005 Member, University Chemical Hygiene Committee, BSU
- 2004-present Member, University Radiation Safety Committee, BSU
- 2004 Member, Idaho BRIN Summer Research Undergraduate Fellowship Selection Committee, BSU

Departmental Committees

- 2010-present Chair, Department of Biological Sciences, BSU
- 2007-2010 Associate Chair, Department of Biological Sciences, BSU
- 2009-2010 Member, Promotion & Tenure Committee, Dept. Biological Sciences, BSU
- 2007 Director, Graduate Studies Program, Dept. Biological Sciences, BSU
- 2004-2010 Member, Graduate Studies Committee, Dept. Biological Sciences, BSU
- 2006 Member, Raptor Research Student Grant Selection Committee, BSU
- 2005 Member, Systematist Faculty Position Search Committee, BSU
- 2005 Member, Raptor Research Student Grant Selection Committee, BSU
- 2004 Member, Environmental Microbiologist Faculty Search Committee, BSU
- 2003 Member, Microbiologist Faculty Position Search Committee, BSU

University-related projects

- 2008 Speaker, forum for new BSU faculty hires
- 2006 Judge for Undergraduate Research and Scholarship Conference
- 2005 Speaker, forum for NIH grant seekers, Sept. 22nd
- 2005 Departmental representative for BSU Graduate & Professional School Day, Oct. 27th
- 2004 Departmental representative for BSU Graduate & Professional School Day, Oct. 28th
- 2004 Co-host for the 4th Virtual Conference on Genomics and Bioinformatics, Sept. 21-24