

CURRICULUM VITAE



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Position: Senior Investigator

Institution: National Cancer Institute, National Institutes of Health

Location: Frederick, Maryland, USA

Education:

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| 1985 | Ph.D. (Inorganic Chemistry), University of California at Santa Barbara, Santa Barbara, CA |
| 1983 | M.S. (Chemistry), University of California at Santa Barbara, Santa Barbara, CA |
| 1980 | B.S. (Chemistry), State University of New York (SUNY), College at Oneonta, Oneonta, NY |

Brief Chronology of Employment:

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| 2015-present | Deputy Director for Translational Research, Cancer Inflammation Program, Center for Cancer Research, National Cancer Institute, NIH, Frederick, MD |
| 2013-2015 | Adjunct, Cancer Inflammation Program, National Cancer Institute, Center for Cancer Research, NIH, Frederick, MD |
| 1999-2015 | Senior Investigator/Section Chief, Radiation Biology Branch, Division of Clinical Sciences, National Cancer Institute, NIH, Bethesda, MD |
| 1995-1999 | Senior Staff Fellow, Radiation Biology Branch, Division of Clinical Sciences, National Cancer Institute, NIH, Bethesda, MD |
| 1992-1995 | Senior Staff Fellow, Chemistry Section, Laboratory of Comparative Carcinogenesis, National Cancer Institute, NIH, Frederick, MD |
| 1989 -1992 | Staff Fellow, Chemistry Section, Laboratory of Comparative Carcinogenesis National Cancer Institute, NIH, Frederick, MD |
| 1989 | Scientific Consultant, Program Resources, Inc., Frederick, MD |
| 1985-1989 | Postdoctoral Researcher, MIT, Cambridge, MA |
| 1985 | Postdoctoral Researcher, University of California at Santa Barbara, Santa Barbara, CA |
| 1983 | Research Consultant, Banner Gelatin Corp, Chatsworth, CA |
| 1980-1985 | Teaching/Research Assistantships, University of California at Santa Barbara, Santa Barbara, CA |
| 1977-1980 | Research Assistant, SUNY, Oneonta, NY |

Societies:

American Chemical Society
American Association for the Advancement of Science
Nitric Oxide Society
Oxygen Society
Radiation Research Society

Editorial Boards:

Journal of Biological Chemistry, 2013-2018
Free Radicals in Biology and Medicine, 1996-present
Nitric Oxide Biology and Medicine, 1996-present
Chemical Research in Toxicology, 2010-2013
Journal of Biological Chemistry, 2007-2012
Analytical Biochemistry, 1998-2006

Honors and Other Special Scientific Recognition:

Federal Technology Transfer Award, 2017
Guest Editor for Antioxidant and Redox Signaling Nitric oxide and Cancer 2017
Federal Technology Transfer Award, 2016
Federal Technology Transfer Award, 2015
Murtha Cancer Center – Center for Cancer Research Activation Award, 2015
Federal Technology Transfer Award, 2014
Member of the Electorate Nominating Committee (ENC) of the Section on Chemistry, 2013
American Association for the Advancement of Science, 2013
National Cancer Institute Recognition of Appreciation, 2013
Federal Technology Transfer Award, 2012
Federal Technology Transfer Award, 2011
Federal Technology Transfer Award, 2010
Chair, Gordon Conference, “Nitric Oxide”, 2009
Federal Technology Transfer Award, 2009
Faculty Member, Faculty of 1000, 2009
Fellow, American Association for the Advancement of Science, 2008
Federal Technology Transfer Award Chair, Gordon Conference, “Nitric Oxide”, 2008
Federal Technology Transfer Award, 2008
Vice-Chair Gordon Research Conference “Nitric Oxide” (elected 2005), 2007
NIH Patent Royalty Fund \$100,000, 2006
Chair and founder; Cancer Redox Biology Faculty, 2004 - present
Guest Editor – Cancer and Nitric Oxide Free Radical in Biology and Medicine, 2002
Division of Clinical Sciences/National Cancer Institute, Intramural Research Award “Developing NO compounds for Specific Targeting to Cancer cells”, \$83,000, 1997-1998
National Institutes of Health, Loan Repayment Award, 1997
National Institutes of Health, National Research Service Award, 1986-1988
Chancellor Patent Funds Award, UC Santa Barbara, 1983
Graduate Student Fellowship, UC Santa Barbara, 1982 - 1983

Professional Service:

Selection Committee for Earl Stadtman Award; Chemistry and Chemical Biology, 2015
NCI Director’s Innovation Awards, 2015-present
Quadrennial review committee for Staff Scientist, 2015-present

Cancer Prevention Fellows committee, 2014
Co-Chair Selection Committee for Earl Stadtman Award; Chemistry and Chemical Biology, 2014
Quadrennial review committee for Staff Scientist, 2014
Quadrennial review committee for Staff Scientist, 2013
Co-Chair Selection Committee for Earl Stadtman Award; Chemistry and Chemical Biology, 2013
Cancer Prevention Fellows committee, 2013
Quadrennial review committee for Staff Scientist, 2012
Quadrennial review committee for Staff Scientist, 2011
Organizing committee, AACR-ACS Chemistry in Cancer Research special conference, 2010
Organizing committee, AACR-ACS Chemistry in Cancer Research special conference, 2009
ARRA-Special Emphasis panel SBIR “Drug Discovery”, 2009
CICR Program Committee, AACR, 2008
Tenure Track committee: Laboratory of Human Carcinogenesis
Search Committee for Chief: Laboratory of Chemical Biology, 2008
Ad Hoc reviewer. NIH Synthetic Biological Chemistry-B (SBCB) study section, 2007
Tenure track search committee Radiation Oncology Branch CCR/NCI/NIH, 2007
Member, NO Society Planning Group International Conference, 2006
Member, CCR Strategic Planning Focus Group *Understanding the Causes and Mechanisms of Cancer*, 2006
Review Panel- quadrennial review Staff Scientist, 2004
Reviewer – Special Emphasis Panel (K12) RFA Interdisciplinary Research Careers in Woman’s Health, 2002
Review Panel – Center for Cancer Research Promotion, 2002-present
Reviewer (ad hoc) – study section for NIAMS, NIH for R21 High Innovation and Impact for Arthritis, Skin and Muscular Diseases, 2000
Reviewer (ad hoc) – general study section for NICHD, NIH, 2000
Reviewer – Special Emphasis Panel (K12) RFA Interdisciplinary Research Careers in Woman’s Health, 2000
Reviewer (ad hoc) – Special Emphasis Panel, Radiation Study Section NCI, NIH, 2000
Reviewer –Special Emphasis Panel for Woman’s Reproductive Health Research Career Development Centers, NICHD, NIH, 1998

Referee for Scientific Journals:

American Journal of Physiology, Analytical Biochemistry, Antioxidant and Redox Signaling, Archives of Biochemistry and Biophysics, Biochemical Pharmacology, British Journal of Pharmacology, Biochemistry, BioTechniques, Cancer Research, Cancer Letters, Carcinogenesis, Chemical Research in Toxicology, Free Radicals in Biology and Medicine, Fertility and Sterility, Gastroenterology, Hepatology, Hypertension, International Journal of Chemical Kinetics, International Journal of Radiation Research, Journal of American Chemical Society, Journal of Biological Chemistry, Journal of Cellular Physiology, Journal of Clinical Investigations, Journal of Immunology, Journal of Neuropharmacology, Journal of Pharmaceuticals and Experimental Therapeutics, Journal of Rheumatology, Molecular Cell, Molecular Medicine, Molecular Pharmacology, Nature Medicine, Nature Chemical Biology, Proceedings National Academy of Science, Science

Referee for grants for the following institutions:

National Science Foundation, Department of Energy, Petroleum Research Fund, Veterans Affairs, Wellcome Foundation, Research Corporation (Tucson, AZ), National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institute for Child Health, American Association for the

advancement of Science, Woman's International Science Collaboration Program, NIH/SBIR Drug Discover for ARRA grants. DOD CRMP breast cancer research.

Patents Issued:

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| US Patent #9012647 | Nitroxyl Non-Steroidal Anti-Inflammatory Compounds and uses thereof in the Treatment and Prevention of Disorders |
| US Patent #8633177 | Nitroxyl (HNO) Releasing Compounds and uses thereof in Treating Disease |
| US Patent #8268890 | Method of Treating Ischemia/Reperfusion Injury with Nitroxyl Donors |
| US Patent No. #7863262 | Nitroxyl Progenitors in the Treatment of Heart Failure |
| US Patent #5,731,305 | (continuation in part of U.S. Patent #5,039,705 and a division of Pat No.#5,208,233) - Anti-Hypertensive Compositions of Secondary Amine-Nitric Oxide Adducts and use thereof |
| US Patent #07/858,885 | Mixed Ligand Metal Complexes of Nitric Oxide Nucleophile Adducts useful as Cardiovascular Agents |
| US Patent #5,212,204 | Antihypertensive Compositions and use thereof |
| US Patent #5,208,233 | (continuation in part of U.S. Patent #5,039,705) - Anti-Hypertensive Compositions of Secondary Amine-Nitric Oxide Adducts and use thereof |
| US Patent #5,039,70 | Anti-Hypertensive Compositions of Secondary Amine-Nitric Oxide Adducts and use thereof |
| US Patent #4,954,526 | Stabilized Nitric Oxide-Primary Amine Complexes useful as Cardiovascular Agents |
| US Patent #5,603,820 | Nitric Oxide Specific Electrode |

Patents Pending:

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| 6,936,639 | The Role of Nitroxyl (HNO) Progenitors in Treatment of Heart Failure |
| 5,840,759 | Use of Nitric Oxide Releasing Compounds to Protect Non-Cancerous Cells from Chemotherapeutic Agents |
| 5,837,736 | Use of Nitric Oxide Releasing Compounds to Sensitize Cancerous Cells to Chemotherapeutic Agents |
| 5,814,667 | Use of Nitric Oxide Releasing Compounds as Hypoxic Cell Radiation Sensitizers |
| 5,789,447 | Use of Nitric Oxide Releasing Compounds to Treat Ischemia Reperfusion Injury |
| 5,650,442 | Use of Nitric Oxide Releasing Compounds as Hypoxic Cell Radiation Sensitizers |

BIBLIOGRAPHY

(Last 10 years)

Published:

300+ publications: ISI h_{ind} 82 >23,000 citation, Google scholar h_{ind} = 100 >36,000 citation

1. Somasundaram, V., Basudhar, B., Bharadwaj, G., No, J.H., Ridnour, L.A., Cheng, R.Y.S., Fujita, M., Thomas, D.D., Anderson, S.K., McVicar, D.W. and Wink, D.A. Molecular Mechanisms of Nitric Oxide in Cancer Progression, Signal Transduction, and Metabolism. Antioxid. Redox Signal., doi: 10.1089/ars.2018.7527, 2018.
2. Fukuto, J.M., Ignarro, L.J., Nagy, P., Wink, D.A., Kevil, C.G., Feelisch, M., Cortese-Krott, M.M., Bianco, C.L., Kumagai, Y., Hobbs, A.J., Lin, J., Ida, T. and Akaike, T. Biological Hydropersulfides and Related Polysulfides – A new Concept and Perspective in Redox Biology. FEBS Lett., 592(12): 2140-2152, 2018.
3. Thomas, K., Moody, T.W., Jensen, R.T., Tong, J., Rayner, C.L., Barnett, N.L., Fairfull-Smith, K.E., Ridnour, L.A., Wink, D.A. and Bottle, S.E. Design, Synthesis and Biological Evaluation of Hybrid Nitroxide-Based Non-Steroidal Anti-Inflammatory Drugs. Eur. J. Med. Chem. 147: 34-47, 2018.
4. Moody, T.W., Ramos-Alvarez, I., Moreno, P., Mantey, S.A., Ridnour, L., Wink, D. and Jensen, R.T. Endothelin Causes Transactivation of the EGFR and HER2 in Non-Small Cell Lung Cancer Cells. Peptides 90: 90-99, 2017.
5. Thomas, D.D. and Wink, D.A. NOS2 as an Emergent Player in Progression of Cancer. Antioxid. Redox Signal. 26(17): 963-965, 2017.
6. Kovacevic, Z., Sahni, S., Lok, H., Davies, M.J., Wink, D.A. and Richardson, D.R. Regulation and Control of Nitric Oxide (NO) in Macrophages: Protecting the "Professional Killer Cell" from its own Cytotoxic Arsenal via MRP1 and GSTP1. Biochim. Biophys. Acta. 1861(5 Pt A): 995-999, 2017.
7. Basudhar, D., Somasundaram, V., de Oliveira, G.A., Kesarwala, A., Heinecke, J.L., Cheng, R.Y., Glynn, S.A., Ambs, S., Wink, D.A. and Ridnour, L.A. Nitric Oxide Synthase-2-Derived Nitric Oxide Drives Multiple Pathways of Breast Cancer Progression. Antioxid. Redox Signal. 26(18): 1044-1058, 2017.
8. de Oliveira, G.A., Cheng, R., Ridnour, L.A., Basudhar, D., Somasundaram, V., McVicar, D.W., Monteiro, H.P. and Wink, D.A. Inducible Nitric Oxide Synthase (NOS2) in the Carcinogenesis of Gastrointestinal Cancers. Antioxid. Redox Signal. 26(18): 1059-1077, 2016.
9. Sektioğlu, I.M., Carretero, R., Bender, N., Bogdan, C., Garbi, N., Umansky, V., Umansky, L., Urban, K., von Knebel-Döberitz, M., Somasundaram, V., Wink, D., Beckhove, P. and Hämmerling, G.J. Macrophage-Derived Nitric Oxide Initiates T-Cell Diapedesis and Tumor Rejection. Oncoimmunology 5(10): e1204506, 2016.

10. Baseler, W.A., Davies, L.C., Quigley, L., Ridnour, L.A., Weiss, J.M., Hussain, S.P., Wink, D.A. and McVicar, D.W. Autocrine IL-10 Functions as a Rheostat for M1 Macrophage Glycolytic Commitment by Tuning Nitric Oxide Production. Redox Biol. 10: 12-23, 2016.
11. Silva Sousa, E.H., Ridnour, L.A., Gouveia, F.S. Jr, da Silva, C.D., Wink, D.A., de França Lopes, L.G. and Sadler, P.J. Thiol-Activated HNO Release from a Ruthenium Antiangiogenesis Complex and HIF-1 α Inhibition for Cancer Therapy. ACS Chem. Biol. 11(7): 2057-2065, 2016.
12. Thomas, D.D., Heinecke, J.L., Ridnour, L.A., Cheng, R.Y., Kesarwala, A.H., Switzer, C.H., McVicar, D.W., Roberts, D.D., Glynn, S., Fukuto, J.M., Wink, D.A. and Miranda, K.M. Signaling and Stress: The Redox Landscape in NOS2 Biology. Free Radic. Biol. Med. 87: 204-225, 2015.
13. Basudhar, D., Ridnour, L.A., Cheng, R., Kesarwala, A.H., Heinecke, J. and Wink, D.A. Biological Signaling by Small Inorganic Molecules. Coord. Chem. Rev. 306(Pt 2): 708-723, 2016.
14. Oishi, J.C., Buzinnari, T.C., Pestana, C.R., De Moraes, T.F., Vatanabe, I.P., Wink, D.A., Da Silva, R.S., Bendhack, L.M. and Rodrigues, G.J. In vitro Treatment with cis-[Ru(H-dcbpy)₂(Cl)(NO)] Improves the Endothelial Function in Aortic Rings with Endothelial Dysfunction. J. Pharm. Sci. 18(5): 696-704, 2015.
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16. Hoos, M.D., Vitek, M.P., Ridnour, L.A., Wilson, J., Jansen, M., Everhart, A., Wink, D.A. and Colton, C.A. The Impact of Human and Mouse Differences in NOS2 Gene Expression on the Brain's Redox and Immune Environment. Mol. Neurodegener. 17: 9:50, 2014.
17. Ridnour, L.A., Cheng, R.Y., Weiss, J.M., Soto-Pantoja, D.R., Basudhar, D., Heinecke, J.L., Stewart, A., DeGraff, W.G., Sowers, A., Thetford, A., Kesarwala, A.H., Roberts, D.D., Young, H.A., Mitchell, J.B., Trinchieri, G., Wiltout, R.H. and Wink, D.A. Nitric Oxide Synthase Inhibition Modulates Immune Polarization and Improves Radiation-Induced Tumor Growth Delay. Cancer Res. 75(14): 2788-2799, 2015.
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19. Cheng, R.Y., Basudhar, D., Ridnour, L.A., Heinecke, J.L., Kesarwala, A.H., Glynn, S., Switzer, C.H., Ambs, S., Miranda, K.M. and Wink, D.A. Gene Expression Profiles of NO- and HNO-Donor Treated Breast Cancer Cells: Insights into Tumor Response and Resistance Pathways. Nitric Oxide 43: 17-28, 2014.
20. Ono, K., Akaike, T., Sawa, T., Kumagai, Y., Wink, D.A., Tantillo, D.J., Hobbs, A.J., Nagy, P., Xian, M., Lin, J. and Fukuto, J.M. Redox Chemistry and Chemical Biology of H₂S, Hydropersulfides, and Derived Species: Implications of their Possible Biological Activity and Utility. Free Radic. Biol. Med. 77: 82-94, 2014.

21. Srinivas, P., Wink, D., Mohanakumar, K.P. and Pillai, M.R. The Legacy of Nitric Oxide: Impact on Disease Biology. Nitric Oxide 43: 1-2, 2014.
22. Soto-Pantoja, D.R., Terabe, M., Ghosh, A., Ridnour, L.A., DeGraff, W.G., Wink, D.A., Berzofsky, J.A. and Roberts, D.D. CD47 in the Tumor Microenvironment Limits Cooperation between Anti-Tumor T Cell Immunity and Radiation Therapy. Cancer Res. 74(23): 6771-6783, 2014.
23. Heinecke, J.L., Ridnour, L.A., Cheng, R.Y., Switzer, C.H., Lizardo, M.M., Khanna, C., Glynn, S.A., Hussain, S.P., Young, H.A., Ambs, S. and Wink, D.A. Tumor Microenvironment-Based Feed-Forward Regulation of NOS2 in Breast Cancer Progression. Proc. Natl. Acad. Sci. USA 111: 6323-6328, 2014.
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25. Samuni, Y., Wink, D.A., Krishna, M.C., Mitchell, J.B. and Goldstein, S. Suberoylanilide Hydroxamic Acid Radiosensitizes Tumor Hypoxic Cells In Vitro through the Oxidation of Nitroxyl to Nitric Oxide. Free Radic. Biol. Med. 73: 291-298, 2014.
26. Basudhar, D., Bharadwaj, G., Cheng, R.Y., Jain, S., Shi, S., Heinecke, J.L., Holland, R.J., Ridnour, L.A., Caceres, V.M., Spadari-Bratfisch, R.C., Paolucci, N., Velázquez-Martínez, C.A., Wink, D.A. and Miranda, K.M. Synthesis and Chemical and Biological Comparison of Nitroxyl- and Nitric Oxide-Releasing Diazeniumdiolate-Based Aspirin Derivatives. J. Med. Chem. 56: 7804-7820, 2013.
27. Heinrich, T.A., da Silva, R.S., Miranda, K.M., Switzer, C.H., Wink, D.A. and Fukuto, J.M. Biological Nitric Oxide Signalling: Chemistry and Terminology. Br. J. Pharmacol. 169: 1417-1429, 2013.
28. Ridnour, L.A., Cheng, R.Y., Switzer, C.H., Heinecke, J.L., Ambs, S., Glynn, S.A., Young, H.A., Trinchieri, G. and Wink, D.A. Molecular Pathways: Toll-like Receptors in the Tumor Microenvironment: Poor Prognosis or New Therapeutic Opportunity. Clin. Cancer Res. 19(6): 1340-1346, 2013.
29. Soto-Pantoja, D.R., Ridnour, L.A., DeGraff, W., Wink, D.A. and Roberts, D.D. Blockade of CD47 Increases Survival and Protects Tissue of Mice Exposed to Total Body Irradiation. Sci. Rep. 3: 1038, 2013.
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33. Ridnour, L., Dhanapal, S., Hoos, M., Wilson, J., Lee, J., Cheng, R., Brueggemann, E., Hines, H., Wilcock, D., Vitek, M., Wink, D. and Colton, C. Nitric Oxide-Mediated Regulation of β -Amyloid Clearance via Alterations of MMP-9/TIMP-1. *J. Neurochem.* 123(5): 736-749, 2012. (Epub ahead of print)
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44. Switzer, C.H., Glynn, S.A., Ridnour, L.A., Cheng, R.Y., Vitek, M.P., Ambs, S. and Wink, D.A. Nitric Oxide and Protein Phosphatase 2A Provide Novel Therapeutic Opportunities in ER-Negative Breast Cancer. Trends Pharmacol. Sci. 32(11): 644-651, 2011.
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49. Wink, D.A., Hines, H.B., Cheng, R.Y., Switzer, C.H., Flores-Santana, W., Vitek, M.P., Ridnour, L.A. and Colton, C.A. Nitric Oxide and Redox Mechanisms in the Immune Response. J. Leukoc. Biol. 89(6): 873-891, 2011.
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