

Department of Biochemistry & Molecular Biology

Chair: Dr. Daniel Organisciak, 937-775-3041

<http://www.med.wright.edu/bmb/>

Refereed publications and book chapters

Dr. Alter

J. Nuss, S. Patrick, G. Oakley, G. Alter, J. Robison, K. Dixon, J. Turchi, 'DNA Damage Induced Hyperphosphorylation of Replication Protein A. 1. Identification of Novel Sites of Phosphorylation in Response to DNA Damage', *Biochemistry*, 44, 8428-8437, 2005.

Dr. Berberich

M. Ghosh, K. Weghorst and S. Berberich, 'MdmX Inhibits ARF Mediated Mdm2 Sumoylation', *Cell Cycle*, 4, 604-608, 2005.

Dr. Kadakia

R. Kommagani, T. Caserta, M. Kadakia, 'Identification of Vitamin D Receptor as A Target of p63', *Oncogene*, 1-7, 2006.

S.M. Rozanzhak, M.P. Kadakia, T.M. Caserta, T.R. Westbrook, M.O. Stone and R.R. Naik, 'Cellular Internalization and Organelle Targeting of Semiconductor Quantum Dots', *Chem. Commun.*, 2217-2219, 2005.

Dr. Leffak

J. Casper, M. Kemp, M. Ghosh, G. Randall, A. Vaillant and M. Leffak, 'The c-myc DNA Unwinding Element Binding Protein Modulates DNA Replication in Vitro', *J. Biol. Chem.*, 280, 13071-13083, 2005.

M. Kemp, M. Ghosh, G. Liu, and M. Leffak, 'The Histone Deacetylase Inhibitor Trichostatin A Alters Replication Origin Activity in Human Cells', *Nucleic Acids Research*, 33, 325-336, 2005.

R. Moaddel, G.B. Price, J. Juteau, M. Leffak, and I.W. Wainer, 'The Synthesis and Initial Characterization of an Immobilized DNA Unwinding Element Binding Protein Chromatographic Stationary Phase.', *J. Chromatography*, 820, 197-203, 2005.

Dr. Organisciak

Z. Ablonczy, R.M. Darrow, D.R. Knapp, D.T. Organisciak, R.K. Crouch, 'Rhodopsin Phosphorylation in Rats Exposed to Intense Light', *Photochem. Photobiol.*, 81, 541-547, 2005.

Dr. Paliy

P. Gyaneshwar, O. Paliy, J. McAuliffe, A. Jones, M. I. Jordan and S. Kustu, 'Lessons from Escherichia coli Genes Similarly Regulated in Response to Nitrogen and Sulfur Limitation', *PNAS*, 102, 3453-3458, 2005.

P. Gyaneshwar, O. Paliy, J. McAuliffe, D. L. Popham, M.I. Jordan and S. Kustu, 'Sulfur and Nitrogen Limitation in Escherichia coli K12: Specific Homeostatic Responses', J Bacteriology, 187, 1074-1090, 2005.

Dr. Patrick

J. E. Nuss, S. M. Patrick, G. Oakley, G. M. Alter, J. G. Robison, K. Dixon, and J. J. Turchi, 'DNA Damage Induced Hyper-phosphorylation of Replication Protein A. 1. Identification of Novel Sites of Phosphorylation in Response To DNA Damage.', Biochemistry, 44, 8428-8437, 2005.

L. Zheng, M. Zhou, Q. Chai, J. Parrish, D. Xue, S. M. Patrick, J. J. Turchi, , S. Yannone, D. C. J. Chen, and B. Shen, 'Novel Function of the Flap Endonuclease-1 Complex in Processing DNA Replication Forks.', EMBO Reports, 6, 83-89, 2005.

S. M. Patrick, G. G. Oakley, K. Dixon, and J. J. Turchi, 'DNA Damage Induced Hyper-Phosphorylation of Replication Protein A. 2. Characterization of DNA Binding Activity, Protein Interactions and Activity In DNA Replication and Repair', Biochemistry, 44, 8438-8448, 2005.

Dr. Prochaska

D. Riegler, L.A. Shroyer, C. Pokalsky, D. Zaslavsky, R. Gennis, and L.J. Prochaska , 'Characterization of Steady-state Activities of Cytochrome c Oxidase at Alkaline pH: Mimicking the Effect of K-channel Mutations in the Bovine Enzyme., 'Biochimica Biophysica acta, 2005.

Dr. Reo

B. Hoffman-Kuczynski and N. V. Reo, 'Administration of Myo-Inositol Plus Ethanolamine Elevates Phosphatidylethanolamine Plasmalogen in the Rat Cerebellum', Neurochemical Research, 30, 47-60, 2005.

Adjunct Faculty Published Articles

Dr. Rubinson

Chinese translated edition of Contemporary Chemical Analysis

Dr. Seybold

L.B. Kier, P.G. Seybold, and C.-K. Cheng, 'Modeling Chemical Systems Using Cellular Automata', Springer: Dordrecht, The Netherlands, 2005.

Abstracts/Presentations at Conferences

Dr. Kadakia

M.P. Kadakia, S.M. Rozanzhak, T.M. Caserta, T.R. Westbrook, M.O. Stone and R.R. Naik, Cellular Internalization and Targeting of Nanoparticles, 229th American Chemical Society National Meeting , San Diego, CA 3/13/2005 - 3/17/2005 (Platform).

Dr. Leffak

M. Kemp, M. Ghosh, N. Katrangi, and M. Leffak, Characterization of the c-myc DNA Unwinding Element Binding Protein DUE-B, Cold Spring Harbor Meeting on Eucaryotic DNA Replication, Cold Spring Harbor, N.Y. 9/7/2005 - 9/11/2005 (Poster).

S. Myers, G. Liu, R.R. Sinden, J. Bissler, and M. Leffak, Influence of Alternative DNA Structures on c-myc Replicator Activity, Cold Spring Harbor Meeting on Eucaryotic DNA Replication, Cold Spring Harbor, N.Y. 9/7/2005 - 9/11/2005 (Poster).

M. Leffak, M. Ghosh, M. Ritzi, A. Schepers, G. Liu, Differential Binding of Replication Proteins Across the Human c-myc Replicator, Cold Spring Harbor Meeting on Eucaryotic DNA Replication, Cold Spring Harbor, N.Y. 9/7/2005 - 9/11/2005 (Platform).

Dr. Organisciak

M. Chrenek, M.L. Patterson, R.M. Darrow, D.T. Organisciak, P. Wong, Expression Profiles of Stress Related Genes During Light-Induced Retinal Damage in Rats, The Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL 4/30/2005 - 5/5/2005 (Poster).

V. Palamalai, R.T. Carruth, R.M. Darrow, P.A. Carr, D.T. Organisciak, M. Miyagi, Light-Induced Protein Nitration in the Photoreceptor Rod Outer Segments, The Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL 4/30/2005 - 5/5/2005 (Poster).

B.D. Maciejko, M. Chambers, A. Blanchard, R. Darrow, Y. Myal, D. Organisciak, P. Wong, Expression of Cited 2, a Gene Isolated From a Light-Induced Retinal Degeneration cDNA Library, in the Degenerating Retina and the Involuting Mammary Gland, The Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL 4/30/2005 - 5/5/2005 (Poster).

R.M. Kelln, V. Vasireddy, R. Darrow, D.T. Organisciak, R. Ayyagari, P. Wong Functional Analysis of a Novel Rat Retinal Expressed Gene Associated with Light-Induced Retinal Degeneration, The Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL 4/30/2005 - 5/5/2005 (Poster).

K. Renganathan, J. Gu, B. Gugiu, X. Gu, R. Darrow, H. Lewis, R.G. Salomon, D.T. Organisciak, J.W. Crabb, Similarities in Plasma Oxidative Modifications from Retinal Light Damage and AMD, The Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL 4/30/2005 - 5/5/2005 (Poster).

D.T. Organisciak, K.M. Henkels, L.S. Barsalou, R.M. Darrow, Hyperthermic Treatment Alters Rat Rod Outer Segment Crystallin Levels, The Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL 4/30/2005 - 5/5/2005 (Poster).

Dr. Paliy

J. Frazier, N. Kelley-Loughnane, S. Trott, J. Lynch, E. Lester, O. Paliy, and B. Foy, Cell-Like Entity (CLE): Stable, Non-living Biological Construct, QB3 Life Engineering Symposium, San Francisco, CA, USA, San Francisco 8/19/2005 - 8/20/2005 (Poster).

Dr. Prochaska

R. Geyer, S. Patli, G.M. Alter, J.P. Hosler, and L.J. Prochaska, Cytochrome c Oxidase Subunit I From *Rhodobacter sphaeroides* Assumes an Alternative Conformation in the Absence of Subunit III. , Biophysical Society, Long Beach, CA 2/16/2005 - 2/20/2005 (Platform).

Dr. Reo

G.L. Jahns, N. DelRaso, M. P. Westrick, V. Chen, N.V. Reo and T. R. Zacharewski, Joint Genomic and Metabolomic Analysis of Toxic Dose-Response Experiments, IEEE Computational Systems Bioinformatics Conference, Stanford University, CA 8/8/2005 - 8/11/2005 (Poster).

D.A. Mahle, N.J. DelRaso, S.C. Gustafson, C. L. Leakeas, M.P. Westrick, A.E. Neuforth and N.V. Reo, Comparison of Plasma and Urine Samples from ANIT-Exposed F344 Rats Using NMR Spectroscopy, Society of Toxicology Annual Meeting, New Orleans, LA 3/6/2005 - 3/10/2005 (Poster).

D.A. Mahle, N.J. DelRaso, S.C. Gustafson, C.L. Leakeas, M. P. Westrick, A.E. Neuforth and N. V. Reo, Comparison of Plasma and Urine Samples from ANIT-Exposed F344 Rats using NMR Spectroscopy, Issues and Applications in Toxicology Risk Assessment, Fairborn, OH 4/25/2005 - 4/28/2005 (Poster).

Invited Lectures/Presentations

Dr. Alter

Prediction of Protein Structure, From DNA to Molecular Machines, Biological Sciences, Ohio Northern, 11/2/2005.

The Computer Revolution in Biomedical Sciences, Café Scientifique, Montgomery County Park District, Cox Arboretum, Dayton, OH, 4/28/2005.

Dr. Berberich

Assessing How Cellular Localization Impacts MdmX Regulation of the p53 Pathway., 3rd International Mdm2 workshop, Konstanz, Germany, 9/9/2005 - 9/12/2005.

Understanding How MdmX Deregulation Impacts the p53 Pathway, Case Western Minisymposium on Cancer, Cleveland, OH, 5/23/2005 - 5/24/2005.

Dr. Leffak

Cis- and Trans-acting Factors at the Human c-myc Replication Origin, Dept. of Pharmacology & Toxicology, WSU, WSU, Dayton, OH, 5/4/2005.

Scientific Research Ethics, OVALS 3rd Annual Conference, Dayton, OH, 3/7/2005 - 3/8/2005.

Dr. Organisciak

Age Related Vision Loss, Cafe Scientifique, Montgomery County Park District, Cox Arboretum, Dayton, OH, 6/23/2005 .

Protection Against Light-Induced Retinal Degeneration, College of Optometry, Ohio State University, Columbus, OH, 7/19/2005.

Dr. Paliy

Cellular Dynamics and Engineering: Cell-Like Entities Project. Signal Transduction Module., AIBS Review workshop, WP-AFRL, Dayton, OH, WP-AFRL, 8/16/2005.

Dr. Patrick

Biochemical Processing of Cisplatin-DNA Interstrand Cross-links (ICLs), Methodist Research Institute, Indianapolis, IN, 3/23/2005.

Biochemical Processing of Cisplatin-DNA Interstrand Cross-links (ICLs), Wake Forest University, Winston-Salem, NC, 4/25/2005 - 4/26/2005.

Biochemical Processing of Cisplatin-DNA Interstrand Cross-links (ICLs), Temple University Hospital, Philadelphia, PA, 8/23/2005 - 8/24/2005.

Biochemical Processing of Cisplatin-DNA Interstrand Cross-links (ICLs), Bowling Green State University, Bowling Green, OH, 10/26/2005.

Biochemical Processing of Cisplatin-DNA Interstrand Cross-links (ICLs), University of Kansas Medical Center, Kansas City, KS, 12/5/2005 - 12/7/2005.

Biochemical Processing of Cisplatin-DNA Interstrand Cross-links (ICLs), Wright State University, Dayton, OH, 9/30/2005.

Invitation to Participate in or Chair Symposia

Dr. Alter

Ohio Collaborative Conference on Bioinformatics (OCCBIO), Reactivity-Based Prediction of a Multi-domain Protein, Replication Protein A, 6/27/2006 - 6/28/2006, Athens OH. (Session Chair)

Dr. Organisciak

ARVO Ocular Cell and Molecular Biology Symposium, Protection Against Light Induced Retinal Degeneration, 9/7/2005 - 9/10/2005, Sarasota, FL. (Invited Participant)

Ohio Lions Research Symposium, Antioxidant Mediated Gene Expression in Retinal Light Damage, 10/3/2004, Columbus, OH. (Invited Participant)

Dr. Paliy

CLE Workshop, N/A, 10/12/2005 - 10/13/2005, Dayton, OH, USA. (Invited Participant)

Dr. Prochaska

Bioenergetics and Oxidative Phosphorylation, 2/16/2005 - 2/21/2005, Biophysical Society 2005 Annual Meeting, Long Beach, CA. (Session Chair)

Symposium on Membrane Proteins, Biological Membranes, Ohio Center for Technology and Science (OCTS) Columbus, OH, October 8, 2005., On the Reconstitution of Bacterial and Mitochondrial Cytochrome c Oxidases into Phospholipid Vesicles: Biophysical and Biochemical Properties., 10/8/2005 - 10/11/2005, Columbus, OH. (Invited Participant)

Member of Editorial Board

Dr. Organisciak

Current Eye Research (1)

Investigative Ophthalmology and Visual Science

Review of Grant Proposals/ Study Section Member/ Ad Hoc

Dr. Alter

National Science Foundation (Ad Hoc)

Dr. Berberich

International Research Foundation (Ad Hoc)

Mersey Kidney Research (Ad Hoc)

National Cancer Institute (NIH) Cancer Molecular Pathobiology Study Section (Ad Hoc)

Dr. Leffak

Israel Cancer Research Foundation (Ad Hoc)

NIH (Member)

Dr. Organisciak

Foundation for Research in Medicine (France) (Ad Hoc)

International Retina Research Foundation (USA) (Ad Hoc)

Dr. Paietta

National Science Foundation (Ad Hoc)
Research Corporation (Ad Hoc)

Dr. Prochaska

American Chemical Society-Petroleum Research Fund (Ad Hoc)
American Heart Association Ohio Valley/Southern Affiliate (Ad Hoc)
American Heart Association Ohio Valley-Southern Consortium, (Chair, Peer Review Study Section on Molecular Biology)

Dr. Reo

American Heart Association/Southern and Ohio Valley, Immunology & Microbiology Study Group I (Ad Hoc)

Distinguished Members/Titles

Offices Held in National/Professional Organizations

Dr. Berberich

Sigma Xi: WSU Chapter (Vice President)

Dr. Kadakia

Associate member in the American Association of Cancer Researchers

Committee member of the Miami Valley Association for Women in Science

Dr. Organisciak

Academy of Medicine Board of Trustees (1998-2008) 2nd term

Board of Governors Ohio BRTT project on Age Related Macular Degeneration appointed (2005-2008)

Board of Trustees Sinclair Community College Biotechnology Program (2003-)

Trustee Biochemistry and Molecular Biology, Association for Research in Vision and Ophthalmology (ARVO) elected 2002-2007

Dr. Prochaska

Board of Directors, American Heart Association, Miami Valley, Dayton

Secretary/Treasurer Sigma Xi- WSU Chapter

Treasurer of Bioenergetics subgroup of the Biophysical Society-elected position

Consultantships

Dr. Alter

Intrexon Corp., Roanoke, VA

Dr. Paliy

Givaudan, Cincinnati, OH

Special Events/ Departmental Seminar Series

Winter Quarter 2005:

Dr. Stephanie Smith, Department of Biological Sciences, Wright State University

Dr. Courtney Sulentic, Department of Pharmacology and Toxicology, Wright State University

Dr. Peter Lauf, Cell Biophysics Group, Department of Pathology, Wright State University, School of Medicine

Dr. Karen Vasques, Department of Carcinogenesis, The University of Texas M.D. Anderson Cancer Center

Dr. Swati Palit Deb, Department of Biochemistry, Virginia Commonwealth University

Dr. Maik Huttemann, Department of Molecular Medicine & Genetics, Wayne State University

Dr. John Bissler, Department of Pediatrics, University of Cincinnati

Dr. Robert Lahue, Eppley Institute for Research in Cancer, University of Nebraska Medical Center

Spring Quarter 2005:

Dr. Leslie Kuhn, Department of Biochemistry and Molecular Biology, Michigan State University

Dr. Robert Hickey, Cancer Center, Indiana University-Purdue

Dr. Edward Lesnefsky, Department of Medicine, Case Western Reserve University

Dr. Graham Walker, Department of Biology, Massachusetts Institute of Technology

Dr. Malgorzata Rozanowska, Cardiff University, UK, (Sponsored by Department of Neuroscience, Cell Biology, and Physiology and Department of Biochemistry and Molecular Biology)

Dr. Bill Bonner, Laboratory of Molecular Pharmacology, Center for Cancer Research NIH

Dr. Barry Winkler, Department of Biomedical Sciences, Oakland University

Dr. Malin Young, Biosystems Research, Sandia National Laboratories

Fall Quarter 2005:

Dr. Steven Patrick, Department of Biochemistry and Molecular Biology, Wright State University

Dr. Alex Almasan, Department of Cancer Biology, Lerner Research Institute

Dr. David Plas, Department of Genome Science, Genome Research Inst, University of Cincinnati

Dr. Lawrence Prochaska, Department of Biochemistry and Molecular Biology, Wright State University

Dr. Lindsey Mayo, Departments of Radiation Oncology and Pharmacology, Case Western University

Dr. Kathleen Boesze Battaglia, School of Dental Medicine, University of Pennsylvania

Dr. Christopher Pearson, Hospital for Sick Children, Toronto, Ontario, Canada

Varandani Memorial Lecture (April 7, 2005) Guest Lecturer: Dr. Paul C. Lauterbur, Department of Chemistry, University of Illinois at Urbana Champaign

Dr. Leffak received the BMS Mentoring Award at the BMS 25 Year Reunion October 28th and 29th.

Dr. Alter participated in Café Scientifique at the Cox Arboretum with the Montgomery County Park District, "The Computer Revolution in Biomedical Sciences", 11/2/05.

Dr. Organisciak participated in Café Scientifique at the Cox Arboretum with the Montgomery County Park District, "Age Related Vision Loss", 6/23/06.

Graduate Students Who Graduated in 2005

Dr. Leffak

D.J. Vaz, M.S., Thesis Title: "DNA Replication Origin promoting activity of CREB transcription factor proteins". Interviewing for commercial biotech positions in/near Boston.

Dr. Turchi

Jiazhen Wang, M.S., Thesis Title: Analysis of Protein Expression in Cisplatin-Resistant Ovarian Cancers by Mass Spectrometry