Biology Department 2011 Publications

- Alexieva-Botcheva K., and Anderson C. W.
  p53.
  Encyclopedia of Signaling Molecules S. Choi, Editor, Springer Science + Business Media, LLC, New York, NY (in press).
- Anderson C.W. and Appella E.
  Signaling to the p53 tumor suppressor through pathways activated by genotoxic and non-genotoxic stresses.
  Regulation in Organelle and Cell Compartment Signaling, R. A. Bradshaw and E. A. Dennis, Editors, Chapter 264, pp. 235-254, Elsevier B.V., San Diego, CA (April, 2011).
- Bagaria A., Kumaran D., Burley S.K., and Swaminathan S.
  Structural basis for a ribofuranosyl binding protein: Insights into the furanose specific transport.
  PROTEINS: Structure, Function, and Bioinformatics 79(4): 1352-1357 (April, 2011). PubMed
- Batsford S., Dunn J., and Mihatsch M.
  Induction of experimental arthritis by borrelial lipoprotein and CpG motifs: Are toll-like receptors 2, 4, 9 or CD-14 involved?
  The Open Rheumatology Journal, 5:18-23 (June, 2011).

- Baxa U., Keller P.W., Cheng N., Wall J.S., and Steven A.C.
  In Sup35p filaments (the [PSI+] prion), the globular C-terminal domains are widely offset from the amyloid fibril backbone.
  Molecular Microbiology, 79(2):523-532 (January, 2011). (Cover) PubMed
- Berman L.E., Allaire M., Chance M.R., Hendrickson W.A., Heroux A., Jakoncic J., Liu Q., Orville A.M., Robinson H.H., Schneider D.K., Shi W., Soares A.S., Stojanoff V., Stoner-Ma D., and Sweet R.M.
  Optics concept for a pair of undulator beamlines for MX.
  Nuclear Instruments and Methods in Physics Research A (in press).
- Brown J.H., Kumar V.S., O'Neall-Hennessey E., Reshetnikova L., Robinson H., Nguyen-McCarty M., Szent-Gyorgyi A.G., and Cohen C.
  Visualizing key hinges and a potential major source of compliance in the lever arm of myosin.
  Proceedings of the National Academy of Sciences USA, 108(1):114-119 (January, 2011). PubMed
- Casjens S.R., Fraser-Liggett C.M., Mongodin E.F., Qiu W.G., Dunn J.J., Luft B.J., and Schutzer S.E.
  Whole genome sequence of an unusual Borrelia burgdorferi sensu lato isolate.
  Journal of Bacteriology, 193(6):1489-1490 (March, 2011). PubMed
- Chen W., Yu X.-H., Zhang K., Shi J., Schreiber L., Shanklin J., and Zhang D.
  Male Sterile 2 encodes a plastid-localized fatty acyl-ACP reductase required for pollen exine development in Arabidopsis thaliana.
  Plant Physiology (submitted).
- Close D., Johnson S.J., Sdano M.A., McDonald S.M., Robinson H., Formosa T., and Hill C.P.
  Crystal structure of the S. cerevisiae Spt6 core and C-terminal tandem SH2 domain.
  Journal of Molecular Biology, 408(4):697-713 (May, 2011). PubMed
- Das B., Bennett P.V., Cutter N.C., Sutherland J.C., and Sutherland B.M.
  Melatonin protects human cells from clustered DNA damages, killing and acquisition of soft agar growth induced by X-rays or 970 MeV/n Fe ions.
  International Journal of Radiation Biology, 87(6):545-555 (June, 2011). PubMed

- Das P. and Sutherland B.M.
  Processing of abasic DNA clusters in hApeI-silenced primary fibroblasts exposed to low doses of X-irradiation.
  Journal of Biosciences, 36(1):105-116 (March, 2011). PubMed
- Fan J., Andre C., and Xu C.
  A chloroplast pathway for the de novo biosynthesis of triacylglycerol in Chlamydomonas reinhardtii.
  FEBS Letters, 585(12):1985-1991 (June, 2011). PubMed
- Fan J., and Xu C.
  Genetic analysis of Arabidopsis mutants impaired in plastid lipid import reveals a role of membrane lipids in chloroplast division.
  Plant Signaling & Behavior, 6(3):458 460 (March, 2011). PubMed
- Fernandez M.M., Cho S., De Marzi M.C., Kerzic M.C., Robinson H., Mariuzza R.A., and Malchiodi E.L.
  Crystal structure of staphylococcal enterotoxin G (SEG) in complex with a mouse T-cell receptor β chain.
  Journal of Biological Chemistry, 286(2):1189-1195 (January, 2011). PubMed
- Fu D.
  Zinc transporter YiiP Escherichia coli.
  Handbook of Metalloproteins, A. Messerschmidt, Editor, John Wiley and Sons, Ltd. (submitted).
- Gallagher D.T., Kim S.K., Robinson H., and Reddy P.T.
  Active-site structure of class IV adenylyl cyclase and transphyletic mechanism.
  Journal of Molecular Biology, 405(3):787-803 (January, 2011). PubMed
- Giagnoni L., Magherini F., Landi L., Taghavi S., Modesti A., Bini L., Nannipieri P., van der Lelie D., and Renella G.
  Extraction of microbial proteome from soil: potential and limitations assessed through a model study.
  European Journal of Soil Science, 62(1):74-81 (February, 2011).
- Goble A.M., Zhang Z., Sauder J.M., Burley S.K., Swaminathan S., and Raushel F.M.
  Pa0148 from Pseudomonas aeruginosa catalyzes the deamination of adenine.
  Biochemistry (in press).
- Goldsbury C., Baxa U., Simon M.N., Steven A.C., Engel A., Wall J.S., Aebi U., and Muller S.A.
  Amyloid structure and assembly: Insights from scanning transmission electron microscopy.
  Journal of Structural Biology, 173(1):1-13 (January, 2011). PubMed
- Gou J.-Y., Felippes F.F., Liu C.-J., Weigel D., and Wang J.-W.
  Negative regulation of anthocyanin biosynthesis in Arabidopsis by a miR156-targeted SPL transcription factor.
  Plant Cell, 23(4):1512-1522 (April, 2011).
- Guy J.E., Moche M., Whittle E., Lengqvist J., Shanklin J., and Lindqvist Y.
  Crystal structures of the complex between oxidized stearoyl-acyl-carrier-protein desaturase and acyl carrier protein-implications for regioselectivity.
  Journal of Biological Chemistry (submitted).
- Hale M., Oyler G., Swaminathan S., and Ahmed S.A.
  Basic tetrapeptides as potent intracellular inhibitors of type A Botulinum neurotoxin protease activity.
  Journal of Biological Chemistry, 286(3):1802-1811 (January, 2011). PubMed
- Han Q., Robinson H., Cai T., Tagle D.A., and Li J.
  Biochemical and structural characterization of mouse mitochondrial aspartate aminotransferase, a newly identified kynurenine aminotransferase-IV.
  Bioscience Report (accepted).

- Harada Y., Li Hua, Wall J.S., Li H., and Lennarz W.J.
  Structural studies and the assembly of the heptameric post-translational translocon complex.
  Journal of Biological Chemistry, 286(4):2956-2965 (January, 2011). PubMed
- Hay J. and Schwender J.
  Computational analysis of storage synthesis in developing oilseed rape (Brassica napus L.) embryos: Flux variability analysis in relation to 13C-metabolic flux analysis.
  Plant Journal (accepted).
- Hay J., and Schwender J.
  Metabolic network reconstruction and flux variability analysis of storage synthesis in developing oilseed rape (Brassica napus L.) embryos.
  The Plant Journal (accepted).
- He J., Scott J.L., Heroux A., Roy S., Lenoir M., Overduin M., Stahelin R.V., and Kutateladze T.G.
  Molecular basis of phosphatidylinositol 4-phosphate and ARF1 GTPase recognition by the FAPP1 pleckstrin homology (PH) domain.
  Journal of Biological Chemistry, 286(21):18650-18657 (May, 2011). PubMed
- Kamada R., Nomura T., Anderson C.W., and Sakaguchi K.
  Cancer-associated p53 tetramerization domain mutants: Quantitative analysis reveals a low threshold for tumor suppressor inactivation.
  Journal of Biological Chemistry, 286(1):252-258 (January, 2011). PubMed
- Kamat S.S., Bagaria A., Kumaran D., Holmes-Hampton G.P., Fan H., Sali A., Sauder J.M., Burley S.K., Lindahl P.A., Swaminathan S., and Raushel F.M.
  Catalytic mechanism and three-dimensional structure of adenine deaminase.
  Biochemistry, 50(11):1917-1927 (March, 2011). PubMed
- Lebel E.A., Rusek A., Sivertz M.B., Yip K., Thompson K.H., and Tafrov S.T.
  Exposure of secondary particle radiation causes persistent DNA damage in normal human keratinocytes.
  Japanese Journal of Radiation Research (submitted).
- Li L.-L., Taghavi S., McCorkle S.M., Zhang Y.-B., Blewitt M.G., Brunecky R., Adney W.S., Himmel M.E., Brumm P., Drinkwater C., Mead D.A., Tringe S.G., and van der Lelie D.
  Bioprospecting metagenomics of decaying wood: Mining for new glycoside hydrolases.
  Biotechnology for Biofuels (accepted).
- Lin G., Li H., and Nathan C.F.
  Bacterial proteasome.
  Handbook of Proteolytic Enzymes, 3rd Edition, N. D. Rawlings and G. Salvesen, Editors, Chapter 847, Elsevier, B.V., Oxford, UK (submitted).
- Liu C.-J., Miao Y.C., and Zhang K.W.
  Sequestration and transport of lignin monomeric precursors.
  Molecules, 16(1):710-727 (January, 2011). PubMed
- Livey I., O'Rourke M., Traweger A., Savidis-Dacho H., Crowe B.A., Barrett P.N., Yang X, Dunn J.J., and Luft B.J.
  A new approach to a lyme disease vaccine.
  Clinical Infectious Diseases,52(3):s266-s270 (February, 2011). PubMed
- Lu F., Zhang Y., van der Lelie D., and Gang O.
  Packing of molecularly linked nanocubes.
  Nature (submitted).
- Matilla M.A., Pizarro P., Roca A., Fernández M., Duque E., Molina L., van der Lelie D., Gómez M., Segura A., and Ramos J.-L.
  Complete genome of the plant growth-promoting rhizobacterium Pseudomonas putida BIRD-1.
  Journal of Bacteriology,193(5):1290 (March, 2011). PubMed

- Miloslavina Y., Lambrev P.H., Javorfi T., Varkonyi Z., Wall J.S., Hind G., and Garab G.
  Anisotropic circular dichroism signatures of oriented thylakoid membranes and lamellar aggregates of LHCII.
  Photosynthesis Research (in press).
- Naidu M.D., Agarwal R., Pena L.A., Cunha L., Mezei M., Shen M., Wilson III D.M., Sanchez Z., and Waring M.J.
  Lucanthone and its derivative Hycanthone inhibit Apurinic Endonuclease-1 (APE1) by direct protein binding.
  Journal of Biological Chemistry (submitted).
- Orville A.M., Buono R., Cowan M., Heroux A., Shea-McCarthy G., Schneider D.K., Skinner J.M., Skinner M.J., Stoner-Ma D., and Sweet R.M.
  Correlated single-crystal electronic absorption spectroscopy and X-ray crystallography at NSLS beamline X26-C.
  Journal of Synchrotron Radiation, 18(Pt 3):358-366 (May, 2011). PubMed
- Phan G., Remaut H., Wang T., Allen W.J., Pirker K.F., Lebedev A., Henderson N.S., Geibel S., Volkan E., Yan J., Kunze M.B., Pinkner J.S., Ford B., Kay C.W., Li H., Hultgren S.J., Thanassi D.G., and Waksman G.
  Crystal structure of the FimD usher bound to its cognate FimC-FimH substrate.
  Nature, 474(7349):49-53 (June, 2011). PubMed
- Schluter P.M., Xu S., Gagliardini V., Whittle E.J., Shanklin J., Grossniklaus U., and Schiestl F.P.
  Stearoyl-ACP desaturases are associated with floral isolation in sexually deceptive orchids.
  Proceedings of the National Academy of Sciences USA 108(14): 5696-5701 (April, 2011). PubMed
- Schutzer S.E., Fraser-Liggett C.M., Casjens S.R., Qiu W.G., Dunn J.J., Mongodin E.F, and Luft B.J.
  Whole-genome sequences of thirteen isolates of Borrelia burgdorferi.
  Journal of Bacteriology, 193(4):1018-1020 (February, 2011). PubMed
- Schwender J.
  Experimental flux measurements on a network scale.
  Frontiers in Plant Physiology (submitted).
- Scotto-Lavino E., Bai M., Zhang Y.-B., and Freimuth P.
  Export is the default pathway for soluble unfolded polypeptides that accumulate during expression in Escherichia coli.
  Protein Expression and Purification, 79(1):137-141 (September, 2011). PubMed
- Sethi D.K., Schubert D.A., Anders A.K., Heroux A., Bonsor D.A., Thomas C.P., Sundberg E.J., Pyrdol J., and Wucherpfennig K.W.
  A highly tilted binding mode by a self-reactive T cell receptor, results in altered engagement of peptide and MHC.
  Journal of Experimental Medicine, 208(1):91-102 (January, 2011). PubMed
- Sheng J., Hassan A.E., Zhang W., Zhou J., Xu B., Soares A.S., and Huang Z.
  Synthesis, structure and imaging of oligodeoxyribonucleotides with tellurium-nucleobase derivatization.
  Nucleic Acids Research, 39(9):3962-3971 (May, 2011). PubMed
- Shi J., Tan H., Yu X.-H., Liu Y., Liang W., Ranathunge K., Franke R.B., Schreiber L., Wang Y., Kai G., Shanklin J., Ma H., and Zhang D.
  Defective Pollen Wall is required for anther and microspore development in rice and encodes a fatty acyl carrier protein reductase.
  Plant Cell (in press).
- Soares A.S., Engel M.A., Stearns R., Datwani S., Olechno J., Ellson R., Skinner J.M., Allaire M., and Orville A.M.
  Acoustically mounted microcrystals yield high resolution x-ray structures.
  Biochemistry, 50(21):4399-4401 (May, 2011). PubMed

- Stadler A.L., Sun D., Maye M.M., van der Lelie D., and Gang O.
  Site-selective binding of nanoparticles of double-stranded DNA via PNA 'invasion'.
  ACS NANO, 5(4):2467-2474 (April, 2011). PubMed
- Stisova V., Abele W.H., Thompson K.H., Bennett P.V., and Sutherland B.M.
  Response of primary human fibroblasts exposed to solar particle event protons.
  Radiation Research (in press).
- Stoner-Ma D., Skinner J.M., Schneider D.K., Cowan M., Sweet R.M., and Orville A.M.
  Single-crystal Raman spectroscopy and x-ray crystallography at beamline X26-C of the NSLS.
  Journal of Synchrotron Radiation, 18(1):37-40 (January, 2011). PubMed
- Sutherland J.C.
  Measurement of the circular dichroism of electronic transitions.
  Advances in Chiroptical Methods, N. Berova, P. Poiavarapu, K. Nakanishi, and R. W. Woody, Editors, John Wiley & Sons, Inc., Hoboken, NJ (in press).
- Swaminathan S.
  Molecular structures and functional relationships in clostridial neurotoxins.
  FEBS Journal (in press).
- Taghavi S., Weyens N., Vangronsveld J., and van der Lelie D.
  Improved phytoremediation of organic contaminants through engineering of bacterial endophytes of trees.
  Endophytes of Forest Trees: Biology and Applications, Forestry Sciences Series, 1st Edition, A. M. Pirttila and A. C. Frank, Editors, Vol. 80, Chapter 13, Springer Science + Business Media, LLC, New York, NY (August, 2011).
- Truschel S.T., Sengupta D., Foote A., Heroux A., Macbeth M.R., Linstedt A.D.
  Structure of the membrane-tethering GRASP domain reveals a unique PDZ ligand interaction that mediates Golgi biogenesis.
  Journal of Biological Chemistry, 286(23):20125-20129 (June, 2011). PubMed
- Taghavi S., Weyens N., Vangronsveld J., and van der Lelie D.
  Improved phytoremediation of organic contaminants through engineering of bacterial endophytes of trees.
  Endophytes of Forest Trees: Biology and Applications, Springer Forestry Series, A. M. Pirttila and A. C. Frank, Editors, Springer Science + Business Media, LLC, New York, NY (submitted).
- Wallace B.A., Gekko K., Hoffmann S.V., Lin Y.-H., Sutherland J.C., Tao Y., Wien F., and Janes R.W.
  Synchrotron radiation circular dichroism (SRCD) spectroscopy: An emerging method in structural biology for examining protein conformations and protein interactions.
  [Conference Paper: 16th Pan-American Synchrotron Radiation Instrumentation Conference, Argonne National Laboratory, September 21-24, 2010.] Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment (in press).
- Wei H., Wang Z., Zhang J., House S., Gao Y. G., Yang L., Robinson H., Tan L. H., Xing H., Hou C., Robertson I.M., Zuo J.M., and Lu Y.
  Time-dependent, protein-directed growth of gold nanoparticles within a single crystal of lysozyme.
  Nature Nanotechnology, 6(2):93-97 (February, 2011). PubMed
- Weyens N., Boulet J., Adriaensen D., Timmermans J.-P., Prinsen E., Van Oevelen S., D'Haen J., Smeets K., van der Lelie D., Taghavi S., and Vangronsveld J.
  Colonization and plant growth promoting capacity of the endophyte Pseudomonas putida W619 in hybrid poplar.
  Plant Biology (in press).

- Weyens N., Truyens S., Saenen E., Boulet J., Dupae J., Taghavi S., van der Lelie D., Carleer R., and Vangronsveld J.
  Endophytes and their potential to deal with co-contamination of organic contaminants (toluene) and toxic metals (nickel) during phytoremediation.
  Intl. J. Phytoremed., 13(3):244-255 (March, 2011). PubMed
- Wu X., Monchy S., Taghavi S., Zhu W., Ramos J., and van der Lelie D.
  Comparative genomics and functional analysis of niche-specific adaptation of Pseudomonas putida.
  FEMS Microbiology Reviews, 35(2):299-323 (March, 2011). PubMed
- Yu X.-H., Rawat R., and Shanklin J.
  Characterization and analysis of the cotton cyclopropane fatty acid synthase family and their contribution to cyclopropane fatty acid synthesis.
  BMC Plant Biology, 11:97 (May, 2011). PubMed
- Zhai Q., Landesman M.B., Robinson H., Sundquist W.I., and Hill C.P.
  Identification and structural characterization of the ALIX-binding late domains of simian immunodeficiency virus SIVmac239 and SIVagmTan-1.
  Journal of Virology 85(1): 632-637 (January, 2011). PubMed
- Zhang Y., Buchko G.W., Qin L., Robinson H., and Varnum, S.M.
  Crystal structure of the receptor binding domain of the botulinum C-D mosaic neurotoxin reveals potential roles of lysines 1118 and 1136 in member interactions.
  Biochemical and Biophysical Research Communications, 404(1):407-412 (January, 2011). PubMed
- Zhang Z., Zhou R., Sauder J.M., Tonge P.J., Burley S.K., and Swaminathan S.
  Sructural and functional studies of fatty acyl-adenylate ligases from E. coli and L. pneumophila.
  Journal of Molecular Biology, 406(2):313-324 (February, 2011). PubMed