

CURRICULUM VITAE

University of Idaho

NAME: Andrzej J. Paszczynski

DATE: December, 2012

RANK OR TITLE: Professor
Associate Director, Environmental Biotechnology Institute
Adjunct Professor in Environmental Science
Adjunct Professor in Microbiology, Molecular Biology & Biochemistry Graduate Programs

DEPARTMENTS: School of Food Science

OFFICE LOCATION AND CAMPUS ZIP: FRC 103A; 1052

OFFICE PHONE: (208) 885-6318

FAX: (208) 885-5741

EMAIL: andrzej@uidaho.edu

WEB: <http://sfs.wsu.edu/>

DATE OF FIRST EMPLOYMENT AT UI: 1987

DATE OF TENURE: tenured 2006

DATE OF PRESENT RANK OR TITLE: 2011

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

Ph.D., University of Marie Curie-Skłodowska, Lublin, Poland, 1980, Biochemistry

M.S., University of Marie Curie-Skłodowska, Lublin, Poland, 1973, Biochemistry

EXPERIENCE:

Teaching, Extension and Research Appointments:

- 2011- Professor, School of Food Science, University of Idaho and Washington State University
- 2011- Adjunct Professor Microbiology Molecular Biology and Biochemistry Program
- 2004 - Adjunct Professor Environmental Science Program, University of Idaho
- 2000 - 2011 Associate Professor of Biochemistry, Department of Microbiology, Molecular Biology, and Biochemistry/Environmental Biotechnology Institute (EBI) and Associate Director of Environmental Biotechnology Institute, University of Idaho.
- 1991-2000 Research and Teaching Associate, Institute for Molecular and Agricultural Genetic Engineering, University of Idaho, Moscow.

- 1987-1991 Visiting Assistant Professor; on leave from University of Marie Curie-Skłodowska, Lublin, Poland; Department of Bacteriology and Biochemistry, University of Idaho, Moscow
- 1984-1986 Research Scientist, College of Biological Sciences, University of Minnesota, Navarre, MN.
- 1980-1984 Assistant Professor, Department of Biochemistry and Department of Applied Microbiology, University of Marie Curie-Skłodowska, Lublin, Poland

Academic Administrative Appointments:

- 2000 - Associate Director, Environmental Biotechnology Institute, University of Idaho, Moscow

Non-Academic Employment

- 1984-1986 Research Scientist, ChemGen Corporation, Boston, MA
- 1992 - Co-founder, Innovative Biosystems, Inc., Moscow, Idaho. IBS is a small business specializing in design of novel bioreactors and production of biological agents (bio-herbicides) for control of plant disease.

Consulting:

- 2011- Consultant, Schweitzer Engineering Laboratory, Pullman WA. Electronic equipment corrosion study.
- 1997-1998 Consultant, J.R. Simplot. Worked with the Simplot Company to solve technological problems in phosphate fertilizer-producing plants.
- 2008-2009 Consulting, Western Polymer Corporation. Help to eliminate bacterial contamination in chemically modified starches that Western Polymer Corporation produces.

TEACHING ACCOMPLISHMENTS:**Areas of Specialization:**

Biochemistry of iron transport, with emphasis on siderophores structure and functions; impact of reactive oxygen species (ROS) on living systems, new functions of peroxidases and catalases; instrumental analysis with emphasis on chromatographic and mass spectrometry methods, proteomics; supercritical fluids applications to sterilization and extraction; application of magnetic nanoparticles to nuclear fuel enrichment and radioactive waste treatment.

Courses Taught:

- Instrumental Analysis (MMBB-520) – 2CR, every spring semester, from 1996
- Advanced Biochemistry (MMBB-442, MMBB-542) – 3CR, every spring semester from 2001
- Advanced Topics in Molecular Biology, Microbiology and Biochemistry (MMBB-589) – 9CR max, from 2005
- Doctoral Dissertation (MMBB-600), ENVS-600) Master's Research and Thesis (MMBB-500, ENVS-500), Directed Study (MMBB-502, ENVS-502), Undergraduate research (MMBB-401)

Students Advised:

Undergraduate Students:

<u>Academic Year</u>	<u>Undergraduate Students</u>
2000-2001	0
2001-2002	4
2002-2003	7
2003-2004	6
2005-2006	9
2007-2008	12
2009-2010	16
2011- 2012	10

Graduate Students:**As major professor:**

- 1) Alissa Tenuto; M.S; Environmental Science; 2011-present
- 2) Aleksandra Checinska Ph. D. Environmental Science 2008-present
- 3) Andrea Hanson; Ph. D; MMBB/Civil Engineering; 2010-present
- 4) Andrew Johnson; Ph. D; MMBB/EBI; 2006-2011
- 5) Edison Shieh; M.S MMBB/EBI; 2007-2009
- 6) Hyuk Soon Ihm; M.S.; Environmental Science/EBI; 2004-2007
- 7) Ravindra Kumar Paidiseti; M.S.; MMBB/EBI; 2004-2007. At present researchers in DuPont Biological Research Institute in India.
- 8) Anna, Zawadzka; Ph. D; MMBB/EBI; 2002-2005. At present Post Doc in Chemistry Department, University of California at Berkeley and Back Institute in San Francisco.

As graduate committee member:

- 1) Erin Cochran, MS.; Chemical Engineering with Etic Aston; 2011-present
- 2) Sarah Fremgen, Ph. D.; Biological Sciences with Patricia Hartzel; 2011-2012
- 3) Andrea Hansen, Ph. D.; Civil Engineering (MMBB) with Erik Coats; 2010-present
- 4) Mengxue Xia, Ph. D.: Forest Ecology with Kurt Pregitzer; 2011-present
- 5) Maninder Kaur; Ph. D.; Physics with You Qiang; 2009-2012
- 6) Jowita Laniak; Ph. D.; Forest Product with Armando McDonald; 2008-2012
- 7) Ji Youn Lim; Ph. D.; MMBB with Carolyn Bohach; 2008-2009
- 8) Promad Yalamanchili M.S.; Environmental Science; with Batric Pesic; 2010-2011
- 9) Katarzyna Kucharzyk; Ph. D.; Environmental Science; with Tom Hess; 2008-2011
- 10) Ayiguli Keyoumu; M.S., Forest Product with Armando MacDonald; 2007-2007
- 11) Yunfei Deng; M.S; MMBB with Zonglie Hong; 2006-2008

- 12) Timothy Aldridge; M.S.; Chemical Engineering with Aaron Thomas; 2006-2007
- 13) Ewelina Betleja; Ph. D.; MMBB with Doug Cole; 2006-2012
- 14) Pranesh Narayanaswami; M.S.; MMBB with Gary Daughdrill; 2005-2007
- 15) Anna Kolodziejek; MMBB with Greg Bohach; 2005-2011
- 16) Vikranth Arlagadda; M.S.; MMBB with Allan Caplan; 2005-2006
- 17) Loretta Cannon; Ph. D.; MMBB/EBI with Ron Crawford; 2003-2004
- 18) Daniel Erwin; M.S.; MMBB/EBI with Ron Crawford; 2002-2004
- 19) Michelle Norgard; M.S.; MMBB with Greg Bohach; 2002-2004
- 20) Elmer Diaz; M.S.; Food Science and Toxicology with Greg Moller; 2000-2003
- 21) Scott Brandon; M.S.; Chemical Engineering with Roger Korus; 2000-2002
- 22) Chun Li; Ph. D.; Chemistry/EBI with Ron Crawford; 2000-2006
- 23) Mariusz Gajewski; Ph. D.; Chemistry with Leszek Czuchajowski; 2000-2003
- 24) Victoria Hulubei; M.S.; Chemistry with Nick Natale; 2000-2001
- 25) Victoria Hulubei; Ph. D.; Chemistry with Nick Natale; 2001-2003
- 26) Deena Starkel; M.S. Environmental Science with Margrit von Braun; 2000-2001
- 27) Jason Stolworthy; M.S. Chemical Engineering with Roger Korus; 2000-2003
- 28) Wioletta Ramsey; M.S. MMBB/EBI with Ron Crawford; 1999-2003

Materials Developed:

- MMBB-520, SFS-520 (Instrumental Analysis)
- MMBB-442/542, Chem-542, (Advanced Biochemistry II)
- MMBB-589 (MMBB Faculty Team Teaching)

Courses Developed:

- MMBB 520 (Instrumental Analysis)
- MMBB-442/542 (Advanced Biochemistry II)

Non-credit Classes, Workshops, Seminars, Invited Lectures, etc.: presentation type is indicated next to the presenting coauthor.

1. Burbank, M. (Presentation) and Paszczyński, A. Development of a novel sterilization method for endospores and elucidation of the mechanism of H₂O₂ resistance in *Bacillus pumilus* SAFR-032 endospores. 2012 Idaho NSF EPSCoR & NASA EPSCoR Annual Meeting. Boise, ID. Oct, 2012
2. Smith, S.A., (Presentation) and Paszczyński, A. When germs fly: what isolates collected from pre-launch spacecraft can tell us about planetary protection challenges. 2012 Idaho NSF EPSCoR & NASA EPSCoR Annual Meeting. Boise, ID. Oct, 2012
3. Smith, S.A., (Poster), Anderl, D., Shrader, M., Wear, E. Paszczyński, A., Benardini, J. N., Schubert, W., Childers, S.E. Identification, characterization and survival of isolates collected from a mars-bound spacecraft. American Society for Microbiology General Meeting poster # Q-397, June 2012, San Francisco, CA.

4. Checinska, A., (Poster), Burbank, M., Paszczynski, A.J. 2012. Properties and functions of manganese catalases of *Bacillus pumilus* spore coat. American Society for Microbiology General Meeting, June 16-19, San Francisco, CA.
5. Kucharzyk, K.H., (Poster), Crawford, R.L., Paszczynski, A.J., Soule, T., and Hess, T.F. 2011. Use of a genetic algorithm to maximize perchlorate bioremediation. International Symposium on Bioremediation and Sustainable Environmental Technologies; Battelle, June 27-30, 2011, Reno, NV.
6. Bansal, R., (Poster), Deobald, L. A., Crawford, R. L., and Paszczynski, A. J. 2010. Development of protein biomarkers as evidence for perchlorate contamination and degradation in environmental samples. American Society for Microbiology 110th General Meeting, San Diego.
7. Kucharzyk, K.H., (Poster), Crawford, R.L., Paszczynski, A.J., Soule, T., Hess, T.F. Use of genetic algorithm to increase degradation rates of perchlorate by artificially designed consortia; International Symposium on the Bioremediation and Sustainable Environmental Technologies Symposium (June 27-30, 2010, Reno, NV).
8. Kucharzyk, K.H., (Poster), Crawford, R.L., Paszczynski, A.J., Soule, T., Hess, T.F. Use of genetic algorithm to increase degradation rates of perchlorate by single strains and consortia; Seventh International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Battelle (May 24-27, 2010, Monterey, CA).
9. Bansal, R., (Poster), Deobald, L. A., Paszczynski A. J. and Crawford. R. L. Development of protein biomarkers as evidence for perchlorate contamination and degradation in environmental samples. American Society for Microbiology, 110th General Meeting, San Diego, CA, US, May 23-27, 2010.
10. Han, H., Kaczor, J., Kaur, M., Johnson, A., Paszczynski, A. and Qiang, Y. (Presentation), Silica coated magnetic nanoparticles for separation of nuclear acidic waste. 11th Joint MMM-Intermag Conference, Washington, DC, USA, Jan. 18-22, 2010.
11. Kaur, M. (Poster), Singh, T. Han, H. Johnson, A., Paszczynski. A. and Qiang, Y. Application of core shell iron-iron oxide magnetic nanoparticles in nuclear waste separation technology American Physical Society Northwest Section meeting, University of British Columbia, Vancouver, B. C., Canada, May 14-16, 2009.
12. Han, H., (Presentation), Kaur, M., Singh, T., Qiang, Y., Johnson, A., Paszczynski, A. Dispersion and aggregation of magnetic nanoparticles for nuclear waste separation. American Physical Society Northwest Section meeting, University of British Columbia, Vancouver, B. C., Canada, May 14-16, 2009.
13. Ederer, M. M., J. L. Crawford, W. Falcon, R. Bansal, T. F. Hess, A. J. Paszczynski, (Poster), and R. L. Crawford. Sequence comparison of genes involved in perchlorate and/or chlorate degradation and their heterologous expression. Annual Meeting of the American Society for Microbiology, Philadelphia, Pennsylvania; May 18-21, 2009.
14. Kucharzyk, K.H. (Poster), Crawford, R.L., Paszczynski, A.J., Hess, T.F. A new method for high-throughput perchlorate analysis. ACS Regional Meeting, Salt Lake City, UT, USA, March 22-26, 2009.
15. Radtke, C., (Presentation), Lee, M. Delwiche, M., Newby, D., Paszczynski, A., Paidisetti, R., Crawford, R., Benardini, N., Johnson, A. Conrad, M., Brodie, E., Starr, R., D. Swift, D., and Colwell, F. Coupled biogeochemical process evaluation for conceptualizing trichloroethene co-metabolism. 7th International Symposium for Subsurface Microbiology. Shizuoka, Japan, November 16-21, 2008.
16. Qiang, Y., (Presentation), Paszczynski, A., Sharma, A. and Souza R. Conjugates of enzyme-magnetic nanoparticles for water remediation. International Environmental Nanotechnology Conference, Applications and Implications. Environmental Protection Agency, Chicago IL, October 7-9, 2008.
17. Bansal, R., (Poster), Ederer, M.M., Kucharzyk, K.H., Paszczynski, A.J., and Crawford, R.L. Cloning and expression of the genes encoding the perchlorate reduction pathway from different bacterial species. 108th ASM General Meeting, Boston, MA, June 1-5, 2008; Q-412.
18. Ederer, M. M., (Poster), Bansal, R., Crawford, J.L., Paszczynski, A.J., Hess, T.F., and Crawford, R.L. Comparison of genes involved in perchlorate biodegradation. SERDP & ESTCP - Partners in Environmental Technology Technical Symposium and Workshop, Washington DC, Dec. 2-4, 2008; W-126.
19. Benardini, J., (Poster), Paszczynski, A., Venkateswaran, K., and Crawford, R. *Bacillus pumilus* SAFR-032

- Extreme UV-Resistance. University of Idaho NASA Research Symposium, Moscow, ID, September 20-21, 2007.
20. Deobald, L. (Presentation), and Paszczyński, A. J. Application of liquid chromatography and mass spectrometry to proteomic analysis. Environmental Sensing Symposium, Boise, ID, October 25-26, 2007.
 21. Benardini, J., (Poster), Paszczyński, A., and Crawford, R. Monitoring Natural Attenuation Utilizing Ecoproteomics. Environmental Sensing Symposium, Boise, ID, October 25-26, 2007.
 22. Benardini, J., (Presentation), Paszczyński, A., and Crawford, R. Ecoproteomics: A Novel Approach for the Analysis of Environmental Biofilms. Environmental and Subsurface Science Symposium Featuring Subsurface Bioremediation and Biotechnology, Logan, UT, July 25-27, 2007.
 23. Benardini, J., (Poster), Paszczyński, A.J., Venateswaran, K., and Crawford, R. A Comparative Proteomic Assessment of Extreme Radiation-Resistant *Bacillus pumilus* Spores. American Society of Microbiology's 107th General Meeting, Toronto, Canada, May 21-25, 2007.
 24. Johnson A., Zawadzka. A., (Poster), Crawford R. and Paszczyński, A. J. Novel method for immobilization of haloalkane dehalogenase to magnetic nanoparticles. INRA, Environmental and Subsurface Science Symposium, Moscow, ID, September 24-27, 2006.
 25. Johnson A., (Poster), Zawadzka. A., Crawford R. and Paszczyński, A. J. Novel approaches to protein immobilization onto magnetic iron oxide nanoparticles. The 5th Annual INBRE Research Conference. Coeur d'Alene, ID, August 6-8, 2006.
 26. Padiseti, R., (Poster), and Paszczyński A.J. Identification of proteins from *Methylosinus trichosporium* OB3b responsible for methane oxidation using proteomic tools. INRA, Subsurface Biotechnology and Bioremediation Symposium and Workshop, Bozeman, MT, June 22-23, 2006.
 27. Johnson, A., Zawadzka, A.M., (Poster), Deobald, L. and Paszczyński. A.J. Immobilization of catabolic enzymes onto silica coated magnetic nanoparticles. INRA, Subsurface Biotechnology and Bioremediation Symposium and Workshop, Bozeman, MT, June 22-23, 2006.
 28. Shrama, A.M., (Presentation), Anthony, J., Meyer, D., Nutting, J., Paszczyński, A. and Qiang, Y. Efficient method to attach enzymes to nanodispersive iron nanoparticles. The 2006 IEEE International Magnetic Conference. San Diego, CA, May 8-12, 2006.
 29. Hansen, M.J., (Poster), Natale, N., Kornacki, P. and Paszczyński, A.J. Conjugating magnetic nanoparticles for application in health & environmental research. The 48th Annual Idaho Academy of Science Meeting & Symposium. Moscow, ID, March 24-24, 2006.
 30. Paszczyński, A., (Presentation) Zawadzka, A., and Crawford, R. Pyridine-2,6-dithiocarboxylic acid (pdtc) is an omnipotent bacterial siderophore. INRA, Environmental and Subsurface Science Symposium. Environmental and Subsurface Science Applied to Energy Nuclear and National Security Research. Big Sky, MT, September 19-21, 2005.
 31. Zawadzka, A., (Poster), Crawford, R., and Paszczyński, A. J. Identification of siderophores of *Pseudomonas stutzeri* genomovars. INRA, Environmental and Subsurface Science Symposium. Environmental and Subsurface Science Applied to Energy Nuclear and National Security Research. Big Sky MT, September 19-21, 2005.
 32. Zawadzka, A., (Poster), Crawford, R., and Paszczyński, A. J. Interactions of pyridine-2,6-bis(thiocarboxylic acid) with selenium and tellurium. (Poster – won first place in students poster competition), INRA, Environmental and Subsurface Science Symposium. Environmental and Subsurface Science Applied to Energy Nuclear and National Security Research. Big Sky MT, September 19-21, 2005.
 33. Zawadzka, A. M., (Poster), Vandecasteele, F. P. J. Paszczyński, A. J. Crawford, R. L. Siderophores of *Pseudomonas stutzeri*: Identification and Siderophore Typing. American Society for Microbiology, 105th General Meeting, Atlanta, GA, June 5-10, 2005. I-103.
 34. Paidiseti, R. K., (Poster), Fusco, W., Jung, C., Paszczyński, A., Colwell, F., Crawford R. Purification and Characterization of Metagenomic DNA from Hydrocarbon Contaminated Soils. American Society for Microbiology, 105th General Meeting, Atlanta, GA, June 5-10, 2005. Q-073.

35. Fusco, W., (Poster), Paidisetti, R., Jung, C., Brinkman, C., Kim, K., Paszczynski, A., Colwell, F., and Crawford, R. Obtaining of high-molecular-weight DNA from contaminated soils. In *Applying Molecular Technology to Characterize and Reduce Risks to Humans and the Ecosystem*. Superfund Basic Research Program Annual Meeting. University of Washington Seattle, WA, November 3-4, 2004. pp. 30.
36. Paszczynski, A., (Presentation) Crawford R. and Zawadzka A. Pyridine-2,6-dithiocarboxylic acid, a novel bacterial siderophore involved in degradation of carbon tetrachloride and complexation of heavy metals. INRA Environmental Subsurface Symposium. Environmental and Subsurface Science Applied to Energy Nuclear and National Security Research. Spokane, WA, September 20-22, 2004.
37. Paszczynski, A., (Presentation) and Crawford, R. Degradation of carbon tetrachloride by a novel bacterial siderophore: Pyridine-2,6-dithiocarboxylic acid. The Forth International Conference. Remediation of Chlorinated and Recalcitrant Compounds. Monterey, CA, May 24-27, 2004.
38. Zawadzka A., (Poster), and Paszczynski, A.J. Degradation of halogenated solvents by bacterial siderophore pyridine -2,6-bis(thiocarboxylic acid). The Forth International Conference. Remediation of Chlorinated and Recalcitrant Compounds. Monterey, CA; May 24-27, 2004.
39. Zawadzka A, (Poster), Paszczynski, A., and Crawford R. Pyridine -2,6-bis(thiocarboxylic acid) potential for heavy metal and carbon tetrachloride remediation. INRA Environmental Subsurface Symposium. Environmental and Subsurface Science Applied to Energy Nuclear and National Security Research. Spokane WA, September 20-22, 2004.
40. Paszczynski A., (Invited Presentation) Biotransformation of carbon tetrachloride and chelation of heavy metals by novel siderophore isolated from *Pseudomonas stutzeri*. Sensing and processing by neuronal and microbial communities. A Workshop-Symposium Sponsored by U.S. Army Research Office, High Hampton Inn, Cashiers, NC, April 25-28, 2004.
41. Paszczynski, A. J. (Invited Presentation). Production of small molecular weight catalysts and the mechanism of trinitrotoluene degradation by several *Gloeophyllum* species. Symposium on Recent Advances in Lignin Biodegradation and Biosynthesis and 8th International Conference on Biotechnology in Pulp and Paper Industry. Helsinki, Finland, June 3-8, 2001.
42. Paszczynski, A. (Invited Presentation), Borek, V. Lee C-H, Crawford R. and Lewis T. Catalytic and metal chelating properties of pyridine-2,6-bis(thiocarboxylic acid) produced by *Pseudomonas stutzeri* and *Pseudomonas putida*. Society for Industrial Microbiology Annual meeting. San Diego, CA, July 23-27, 2000.
43. Crawford R. L., (Presentation), Paszczynski, A., Lewis, T., Cortese, M., Lee, C-H., Sebat, J., Greek T., and Annaiah, K. Biotic and abiotic interactions between chlorinated solvents, microbial metabolites, and metals: The example of *Pseudomonas stutzeri* KC. Workshop sponsored by US Department of Energy Natural and Accelerated Bioremediation Program Bioremediation Research Program (NABIR). Dulles Airport Marriott, Virginia, October 28-29, 1999.
44. Büyüksönmez, F., (Poster), Hess, T. F., Crawford, R. L., Paszczynski, A., and Watts, R. J. Optimization of variables of simultaneous chemical-biological mineralization of PCE through surface response methodology. Proc. 20th Symposium on biotechnology for fuels and chemicals, May 1998, Gatlinburg, Tennessee 1999.
45. Büyüksönmez, F., (Poster) Hess, T. F., Crawford, R. L., Paszczynski, A., and Watts, R. J. Simultaneous abiotic-biotic mineralization of perchloroethane (PCE), pp. 277-282. In G. B. Wickramanayake and R. E. Hinchey (ed.), *Designing and applying treatment technologies: Remediation of chlorinated and recalcitrant compounds*. Battelle Press, Columbus, Ohio. 1998.
46. Crawford R. L., Paszczynski, A. (Invited Presentation), and Funk, D. Mechanism of mono- and disazo dye degradation by selected brown rot fungi. Sixth International Mycological Congress IMC6, Jerusalem, Israel; August 23-28, 1998.
47. Paszczynski, A., (Presentation), Goszczynski, S., Crawford, R. L., and Crawford, D. L. Biodegradation of disazo dyes by *Phanerochaete chrysosporium*. Fourth International Symposium on In Situ and On-Site Bioremediation, New Orleans, Louisiana, April 28-May 1, 1997.

48. Goodell, B., (Poster), Liu, J., Jellison, J., Lu, J., Paszczynski, A., and Fekete, F. Chelation activity and hydroxyl radical production mediated by low molecular weight phenolate compounds isolated from *Gloeophyllum trabeum*, p. 591-594. In E. Srebotnik and K. Messner (ed.), Biotechnology in the pulp and paper industry. Recent Advances in Applied and Fundamental Research. Proceeding of the Sixth International Conference on Biotechnology in the Pulp and Paper Industry (ICBPPI). Vienna, Austria, June 11-15, 1995, Facultas-Universitätsverlag, Vienna, 1996.
49. Paszczynski, A., (Poster), Goszczynski, S., Crawford, R., and Crawford, D. Purification of peroxidases from *Phanerochaete chrysosporium* by affinity chromatography, p. 441-445. In E. Srebotnik and K. Messner (ed.), Biotechnology in the pulp and paper industry. Recent Advances in Applied and Fundamental Research. Proceeding of the Sixth International Conference on Biotechnology in the Pulp and Paper Industry (ICBPPI). Vienna, Austria June 11-15, 1995, Facultas-Universitätsverlag, Vienna, Austria, 1996.
50. Paszczynski A., (Presentation) Goszczynski, S., Crawford, R. L., and Crawford, D. L. Interactions of peroxidases with dyes and plastics. Third International Symposium on In Situ and On-Site Bioremediation, San Diego, California, April 28-May 1, 1995.
51. Paszczynski A., (Presentation), Goszczynski, S., Crawford, R. L., and Crawford, D. L. Interactions of peroxidases with dyes and plastics, p. 187-195. In R. E. Hinchee, et al. (ed.), Microbial processes for bioremediation. Battelle Press, Columbus, Ohio, 1994.
52. Paszczynski A. (Presentation), Pasti, M. Goszczynski, S., Crawford, D., and Crawford, L. Designing biodegradability: lessons form lignin, p. 73-78. In B. E. Hassing, et al.(ed.), Abstracts of papers presented on the International Symposium on Application of Biotechnology to Tree Culture, Protection and Utilization, Columbus, Ohio, August 5-8, 1991.
53. Pasti, M. B., (Poster), Hagen, S. R., Goszczynski, S., Paszczynski, A. Crawford, R. L., and Crawford, D. L. The influence of guaiacol and syringyl groups in azo dyes on their degradation by lignocellulosic *Streptomyces* spp. P. 119-120. In B. E. Hassing, et al.(ed.), Abstracts of papers presented on the International Symposium on Application of Biotechnology to Tree Culture, Protection and Utilization, Columbus, Ohio, August 5-8, 1991.
54. Paszczynski, A., (Poster), Crawford, R. L., Goszczynski, S. Pasti, M. B., Crawford, D. L., Degradation of Azo compounds by lignin peroxidase from *Phanerochaete chrysosporium*: role of veratryl alcohol. P. 121-122. In B. E. Hassing, et al.(ed.), Abstracts of papers presented on the International Symposium on Application of Biotechnology to Tree Culture, Protection and Utilization, Columbus, Ohio, August 5-8, 1991.
55. Stephens, R., L., (Presentation), Paszczynski, A., Venkataramu, C. V. and Crawford, R. Mutagenesis of the lignin peroxidase genes of *Phanerochaete chrysosporium*, p. 653-658. In T. K. Kirk and H-M. Chang (ed.), Biotechnology in pulp and paper manufacture. Proceedings, 4th International Conference on Biotechnology of the Pulp and Paper Industry, Raleigh, N.C., May 16-19, 1989. Butterworth-Heinemann, Boston, 1990.
56. Huynh, V-B., Paszczynski, A., Olson, P. and Crawford, R. (Presentation), Oxidation of lignin model compounds by a Manganase-dependent enzyme from *Phanerochaete chrysosporium*, p. 45-48. In Proceedings, 3rd International Conference on Biotechnology of the Pulp and Paper Industry, Stockholm, June 16-19, 1986.
57. Huynh, V-B., Paszczynski, A., Olson, P. and Crawford, R. (Presentation), O-dealkylation of phenoxypropane lignin model compounds by ligninase from *Phanerochaete chrysosporium*, p. 48-50. In Proceedings, 3rd International Conference on Biotechnology of the Pulp and Paper Industry, Stockholm, June 16-19, 1986.
58. Lobarzewski, J., (Presentation), and Paszczynski, A. Immobilized enzymes bioreactor for lignocellulose transformation, p. 353-366. In F. F. deMoraes and G. M. Zenin (ed.), Proceedings of Second Seminar on enzymatic hydrolysis of the biomass, vol. 2. Maringa, Brazil, December 10-13, 1985.
59. Paszczynski, A., Van-Ba Huynh, and Crawford R. (Presentation). An extracellular peroxidase from *Phanerochaete chrysosporium*. P 6-8. In Proceedings of Lignin Biodegradation Workshop, Vancouver, Canada, August 23-24, 1985.

SCHOLARSHIP ACCOMPLISHMENTS:

Publications: The % numbers following my name indicates fraction of my contribution to the given paper. The numbers 50% and larger indicate that I have written first draft of the paper and my research group provided a large portion of the results.

Refereed/Adjudicated: Book Chapters

- 1) Janusz, G., Kucharzyk, K.H., Pawlik, A., Staszczak, M., Paszczynski, A. (**50%**) 2013. Fungal laccase, manganese peroxidase and lignin peroxidase: gene expression and regulation. *Enzyme and Microbial Technology* 52: 1– 12
- 2) Kucharzyk, K.H., Soule, T., T.F., Paszczynski, A.J., (**50%**) and Hess, T.F. 2011. Perchlorate: Status and overview of new remediation technologies. In: "Waste water treatment and reutilization" ISBN 978-953-307-837-3 Editor: F. S. García Einschlag. INTECH Open Access Publishers, Rijeka, Croatia.
- 3) Bansal, R., Crawford, R.L., Hess, T.F. and Paszczynski, A.J., (**50%**). 2011. Perchlorate: production, uses and effects on humans and the environment. In "Perchlorates: production, uses and health effects". ISBN 978-1-61122-143-5. Series: Chemical Engineering Methods and Technology. Editor: Lawrence E. Matthews. NOVA Science. Vol. 8, 237-253.
- 4) Zawadzka, A.M., Paszczynski, A.J., (**50%**) and Crawford, R.L. 2009. Transformations of toxic metals and metalloids by *Pseudomonas stutzeri* strain KC and its siderophore pyridine-2,6-bis(thiocarboxylic acid). A. Singh et al. (eds.), *Advances in Applied Bioremediation*, Soil Biology Vol. 17, 221-238, DOI 10.1007/978-540-89621-0_12, © Springer-Verlag, Berlin, Heidelberg.
- 5) Crawford, L., Hess, T. and Paszczynski A., (**33%**). 2004. Combined biological and abiological degradation of xenobiotic compounds. In A. Singh and O. P. Ward – (eds.) *Bioremediation, Phytoremediation, and Natural Attenuation*, Soil Biology Vol. 2, 251-278, A. Varma Ed. Springer-Verlag, New York.
- 6) Paszczynski, A., (**50%**), Sebat, J., Ervin, D. and Crawford, R. 2004. Biotransformation of carbon tetrachloride by facultative anaerobic bacterium *Pseudomonas stutzeri*. In M. N. Nagano and P. Zuber, (eds.) *Strict and facultative anaerobes: medical and environmental aspects*. Caister Academic Press, Norfolk UK. pp. 317-328.
- 7) Paszczynski, A. (**80%**) and Crawford, R.L. 2000. Recent advances in the use of fungi in environmental remediation and biotechnology. pp 379-408. In G. Stotzky, J.-M. Bollag (ed.), *Soil Biochemistry*, vol 10. Marcel Dekker, New York.
- 8) Paszczynski, A., (**70%**), Goszczynski, S. and Crawford, R.L. 1997. Fungal degradation of azo dyes and its relationship to their structure, pp. 33-45. In G. Saylor et al. (ed.), *Biotechnology in the Sustainable Environment*. Plenum Press, New York.
- 9) Paszczynski, A. (**80%**) and Crawford, R.L. 1995. Book review, Status report in the field of biomass conversion, *Enzymes in Biomass Conversion edited by Gary F. Leatham and Michael E. Himmel, ACS Symposium Series 460, American Chemical Society, 1991. \$99.95 (xv + 520 pages) ISBN 0 8412 8*
- 10) Paszczynski, A. (**80%**) and Crawford, R. L. 1995. Potential for bioremediation of xenobiotic compounds by white-rot fungus *Phanerochaete chrysosporium*. *Biotechnol. Prog.* 11: 368-379.

Peer Reviewed/Evaluated: (as for the end of 2012 all my publications were cited ~2250 times)

2013

- 11) Kaur, M., Johnson, A., Tianc, G., Jiand, W., Rao, L., Paszczynski, A., (**20%**) Qiang, T. 2013. Separation nanotechnology of diethylenetriaminepentaacetic acid bonded magnetic nanoparticles for spent nuclear fuel. *Nano Energy*. 2:124-132.

2012

- 12) Checinska, A., Burbank, M. and Paszczynski, A.J. (**50%**) 2012. Protection of *Bacillus pumilus* spores by catalases. *Applied Environ. Microbiol.* 78:6413-6422.
- 13) Kucharzyk, K.H., Crawford, R.L., Paszczynski A.J., (**30%**) Soule, T., Hess T.F. 2012. Maximizing microbial degradation of perchlorate using a genetic algorithm: media optimization. *J. Biotechnol.* 157:189-197.

2011

- 14) Checinska, A., Fruth, I.A., Green, T.L., Crawford, R.L., Paszczynski, A.J. (**60%**) 2011. Sterilization of biological pathogens using supercritical fluid carbon dioxide containing water and hydrogen peroxide. *J. Microbiol. Methods.* 87: 70–75.
- 15) Johnson, A., Kaczor, J., Qiang, Y., Han, H., Kaur, M., Tian, G., Rao, L. and Paszczynski, A. (**50%**) 2011. Synthesis of a magnetic hydrogel for use as high capacity carrier of organic and biological molecules. *J. Nanopart. Res.* 13: 4881-4895.
- 16) Østergaard, M.E., Kumar, P., Baral, B., Guenther, D.C., Anderson, B.A., Ytreberg, M., Deobald, L., Paszczynski, A.J., (**10%**) Sharma, P.K., Hrdlicka, P.J. 2011. C5-Functionalized DNA, LNA, and -L-LNA: positional control of polarity-sensitive fluorophores leads to improved SNP-typing. *Chem. European J.* 17: 3157-3165.
- 17) Bansal, R., Crawford, L.R. and Paszczynski, A.J. (**70%**) 2011. Peptide biomarkers as evidence of perchlorate biodegradation. *Applied Environ. Microbiol.* 77: 810-820.
- 18) Paszczynski, A.J. (**60%**) Paidisetti, Johnson, A.K., Crawford, R.L., Colwell, F.S., Green, T., Delwiche, M., Lee, H., Newby, D., Brodie, E.L. and Conrad, M. 2011. Proteomic and targeted qPCR analyses of subsurface microbial communities for presence of methane monooxygenase. *Biodegradation.* 22: 1045-1059.

2010

- 19) Østergaard, M.E., Guenther, D.C, Kumar, P., Baral, B., Deobald, L., Paszczynski, A.J., (**10%**) Sharma P.K, and Hrdlicka. P.J. 2010. Pyrene-functionalized triazole-linked 2'-deoxyuridines - probes for discrimination of single nucleotide polymorphisms (SNPs). *Chem. Comm.* 210: 4929-4931.
- 20) Magnuson, T.S., Swenson, M.W., Paszczynski, A.J., (**20%**), Deobald, L.A., Kerk, D. and Cummings, D.A. 2010. Proteogenomic and functional analysis of chromate reduction in *Acidiphilium cryptum* JF-5, an Fe(III)-respiring acidophile. *Biomaterials.* 23: 1129-1138.
- 21) Han, H., Kaczor, J., Kaur, M., Johnson, A., Paszczynski, A.J. (**40%**) and Qiang, Y. 2010. Silica coated magnetic nanoparticles for separation of nuclear acidic waste. *J. Appl. Phys.* 107, 09B520.
- 22) Kucharzyk, K.H., Crawford, R.L, Paszczynski, A.J., (**40%**), Hess T.F. 2010. A method for assaying perchlorate concentration in microbial cultures using the fluorescent dye resazurin. *J. Microbiol. Methods.* 81: 26–32.

2009

- 23) Sau, P.S., Kumar, P., Anderson, B.A., Østergaard, M.E., Deobald, L., Paszczynski, A.J., (**10%**), Sharma, P.K and Hrdlicka, P.J. 2009. Optimized DNA-targeting using triplex forming C5-alkynyl functionalized LNA. *Chem. Comm.* 44: 6756-6758.
- 24) Østergaard, M.E., Kumar, P., Baral, B., Raible, D.J., Kumar, T.S., Anderson, B.A., Guenther, D.C., Deobald, L., Paszczynski, A.J., (**10%**), Sharma P.K. and Hrdlicka P.J. 2009. C5-Functionalized LNA: Unparalleled hybridization properties and enzymatic stability. *ChemBioChem.* 10: 2740-2743.
- 25) Bansal, R., Deobald, L.R., Crawford, R.L. and Paszczynski, A.J. (**60%**) 2009. Proteomic detection of proteins involved in perchlorate and chlorate metabolism. *Biodegradation.* 20: 603–620.

- 26) Shieh, E., Paszczynski, A.J., (50%) Lang, Q., Wai Ch.M. and Crawford, R.L. 2009. Sterilization of *Bacillus pumilus* spores using supercritical carbon dioxide fluid containing various modifiers. *Journal of Microbiological Methods*. 76: 247–252.
- 27) Hun X., Lee Ch., Mosher M.D., Rider K.C., Zhou P., Crawford R.L., Fusco W., Paszczynski A.J. (10%) and Natale N.R. 2009. Design, synthesis and biological evaluation of a novel class of anticancer agents: anthracenylisoxazole lexitropsin conjugate. *BMC, Bioorganic & Medicinal Chemistry*. 17: 1671–1680.
- 2008**
- 28) Johnson, A.K., Zawadzka, A.M., Deobald, L.A., Crawford, R.L., and Paszczynski, A.J., (60%). 2008. Novel method for immobilization of enzymes to magnetic nanoparticles. *Journal of Nanoparticle Research*. 10: 1009-1025.
- 2007**
- 29) Sharma, A., Qiang, Y., Antony, J., Meyer, D., Kornacki, P. and Paszczynski, A.J., (50%). 2007. Dramatic increase in stability and longevity of enzymes attached to monodispersive iron nanoparticles. *IEEE Transactions on Magnetism* 43: 2418- 2420.
- 30) Zawadzka, A.M., Crawford, R. and Paszczynski A.J., (60%). 2007. Pyridine-2,6-bis(thiocarboxylic acid) produced by *Pseudomonas stutzeri* KC reduces chromium(VI) and precipitates mercury, cadmium, lead and arsenic. *BioMetals*. 20: 145-158.
- 2006**
- 31) Zawadzka A.M., Vandecasteele F.P.J., Crawford R.L., and Paszczynski A.J., (60%). 2006. Identification of Siderophores of *Pseudomonas stutzeri*. *Canadian J. Microbiol.* 52: 1164:1176.
- 32) Kyunghye, L., Wang, T., Paszczynski A.J., (40%) and Daoud, S.S. 2006. Expression proteomics to p53 mutation in breast cancer cells reactivation with PRIMA-1. *Biochem. Biophys. Res. Commun.* 349: 1117–1124.
- 33) Zawadzka A.M., Crawford R., and Paszczynski A.J., (60%). 2006. *Pseudomonas stutzeri* use secondary siderophore pyridine-2,6-bis(thiocarboxylic acid) to reduce and precipitate selenium and tellurium. *Applied Environ. Microbiol.* 72: 3119-3129.
- 2004**
- 34) Yoon, J.W., Minnich, S.A., Ahn, J.S., Park, Y.H., Paszczynski, A., (10%) and Bohach-Hovde, C. 2004. Thermoregulation of the *Escherichia coli* O157:H7 pO157 *ecf* operon and lipid A myristoyl transferase activity involves intrinsically curved DNA. *Molec. Microbiol.* 51: 419–435,
- 35) Twamley, B., Zawadzka, A. and Paszczynski, A., (30%). 2004. 8-hydroxy-3,4-dimethyl-isocoumarin. *Acta Cryst.* E60: o370 - o371.
- 2003**
- 36) Noradoun, Ch., Engelmann, M.D., McLaughlin, M., Hutcheson, R., Breen, K., Paszczynski, A., (10%) and Cheng, I.F. 2003. Destruction of chlorinated phenols by dioxygen activation under aqueous room temperature and pressure conditions. *Ind. Eng. Chem. Res.* 42: 5024-5030.
- 37) Vise, P.D., Kodali, K., Hoe, N., Paszczynski, A., (10%) Musser, J., and Daughdrill, G.D. 2003. Stable isotope labeling of a secreted *Streptococcal* virulence factor using a chemically defined growth media. *Protein Expression and Purification*. 32: 232-238.
- 38) Brandon, M.S., Paszczynski, A.J., (60%), Korus, R., and Crawford, R.L. 2003. The determination of the stability constant for the iron(II) complex of the biochelator pyridine-2,6-bis(monothiocarboxylic acid). *Biodegradation*. 14: 73–82.
- 39) Hess, T.F., Renn, T.S, Watts R.J., and Paszczynski A.J. (30%), 2003. Studies on nitroaromatic compound degradation in modified Fenton reactions by electrospray ionization tandem mass spectrometry (ESI-MS-MS).

Analyst, 128: 156–160.

- 40) Crawford, R.L., Paszczynski, A., (50%) and Allenbach, L. 2003. Potassium ferrate [Fe(VI)] does not mediate self-sterilization of a surrogate Mars soil. *BMC Microbiology*. 3: 2-11.

2002

- 41) Crawford, R.L., Paszczynski, A., (10%), Lang, Q., Erwin, D.P., Allenbach, L., Corti, G., Anderson, T.J., Cheng, I.F., Wai, Ch., Barnes, B., Park, J., Wells, R., Assefi, T., and Mojarradi, M. 2002. Measurement of microbial activity in soil by colorimetric observation of *in situ* dye reduction: an approach to detection of extraterrestrial life. *BMC Microbiology*. 2: 22-30.
- 42) Newcombe D., Paszczynski, A., (60%), Gajewska, W., Kröger, M., and Crawford, R. 2002. Production of small molecular weight catalysts and the mechanism of trinitrotoluene degradation by several *Gloeophyllum* species. *Enzyme Microb. Technol.* 30: 506-517.
- 43) Lang Q., Cheng, F., Wai, Ch.M., Paszczynski, A., (20%), Crawford, R.L., Barnes, B., Anderson, T.J., Wells, R., Corti, G., Allenbach, L., Erwin, D.P., Assefi, T., and Mojarradi, M. 2002. Supercritical fluid extraction and high-performance liquid chromatography-diode array-electrochemical detection of signature redox compounds from sand and soil samples. *Anal. Biochem.* 301: 225–234.
- 44) Cortese, M.S., Paszczynski, A., (60%), Lewis, T.A., Sebat, J. L., Borek, V., and Crawford, R. L. 2002. Metal chelating properties of pyridine-2,6-bis(thiocarboxylic acid) produced by *Pseudomonas* spp. and the biological activities of the formed complexes. *Biometals*. 15: 103–120.

2001

- 45) Lewis, T.A., Paszczynski, A., (40%), Gordon-Wylie, S. W., Jeedigunta, S., Lee, C.-H., and Crawford, R. L. 2001. Carbon tetrachloride degradation by bacterial transition metal chelator pyridine-2,6-bis(thiocarboxylic acid). *Environ. Sci. Technol.* 35: 552-559.
- 46) Sebat, J.L., Paszczynski, A.J., (20%), Cortese, M.S., and Crawford, R.L. 2001. Antimicrobial Properties of Pyridine-2,6-dithiocarboxylic acid, a metal chelator produced by *Pseudomonas* spp. *Appl. Environ. Microbiol.* 67: 3934–3942.
- 47) Crawford, R.L., Paszczynski, A., (20%), Lang, Q., Cheng, I.F., Barnes, B., Anderson, T.J., Wells, R., Wai, Ch., Corti, G., Allenbach, L., Erwin, D.P., Park, J., Assefi, T., and Mojarradi, M. 2001. Defining and measuring the chemical signatures of life. *ICARUS*. 154: 531–539.
- 48) Stolworthy, J., Paszczynski, A., (50%), Korus, R., and Crawford, R. L. 2001. Metal binding by pyridine-2,6-bis(monothiocarboxylic acid), a biochelator produced by *Pseudomonas stutzeri* and *Pseudomonas putida*. *Biodegradation*. 12: 411–418.

1999

- 49) Paszczynski, A., (80%), Crawford, R., Funk, D., and Goodell, B. 1999. *De novo* synthesis of 4,5-dimethoxycatechol and 2,5-dimethoxyhydroquinone by the brown rot fungus *Gloeophyllum trabeum*. *Appl. Environ. Microbiol.* 65: 674-679.
- 50) Büyüksönmez, F., Hess, T.F., Crawford, R.L., Paszczynski, A., (30%), and Watts, R.J. 1999. Optimization of simultaneous chemical-biological mineralization of perchloroethylene. *Appl. Environ. Microbiol.* 65(6): 2784-8.
- 51) Lee, C.-H., Lewis, T.A., Paszczynski, A., (80%), and Crawford, R.L. 1999. Identification of an extracellular agent of carbon tetrachloride dehalogenation from *Pseudomonas stutzeri* strain KC as pyridine-2,6-bis(thiocarboxylate). *Biochem. Biophys. Res. Commun.* 261: 562-566.
- 52) Admassu, W., Gupta, A., Korus, R.A., Breese, T., and Paszczynski, A., (30%).1999. Kinetic characterization of *P. chrysosporium* for growth in low cost medium and for degradation of azo dye # 1. *Adv. Environ. Res.* 2: 397-408.

1998

- 53) Trejo-Estrada, S.R., Paszczynski, A., (33%), and Crawford, D.L. 1998. Antibiotics and enzymes produced by

the biocontrol agent *Streptomyces violaceusniger* YCED-9. J. Industr. Microbiol. Biotechnol. 21: 81-90.

1997

- 54) Goodell, B., Jellison, J., Liu, J., Daniel, G., Paszczynski, A., (20%), Fakete, F., Krishnamuthry, S., Jun, L., and Xu, G. 1997. Low molecular weight chelators and phenolic compounds isolated from wood decay fungi and their role in the fungal biodegradation of wood. J. Biotechnol. 53: 133-162.
- 55) Paszczynski, A., (40%), Goszczynski, S., Crawford, R.L., and Crawford, D.L. 1997. Biodegradation of disazo dyes by *Phanerochaete chrysosporium*, p. 505-510. In B. C. Alleman and A. Leeson (ed.), *In situ* and on-site bioremediation, vol. 2. Battelle Press, Columbus, Ohio.

1994

- 56) Goszczynski, S., Paszczynski, A., (40%), Pasti-Grigsby, M. B., Crawford, R.L., and Crawford, D. L. 1994. New pathway for degradation of sulfonated azo dyes by microbial peroxidases of *Phanerochaete chrysosporium* and *Streptomyces chromofuscus*. J. Bacteriol. 176: 1339-1347.
- 57) Pasti-Grigsby, M. B., Paszczynski, A., (30%), Goszczynski, S., Crawford, D.L., and Crawford, R.L. 1994. Biodegradation of novel azo dyes, p. 384-390. In R. E. Hinchee, et al. (ed.), *Applied Biotechnology for Site Remediation*. Lewis Publishers, London.

1992

- 58) Pasti-Grigsby, M.B., Paszczynski, A., (60%), Goszczynski, S., Crawford, D.L., and Crawford, R.L. 1992. Influence of aromatic substitution patterns on azo dye degradability by *Streptomyces* spp. and *Phanerochaete chrysosporium*. Appl. Environ. Microbiol. 58: 3605-3613.
- 59) Paszczynski, A., (70%), Pasti-Grigsby M. B., Goszczynski, S., Crawford, D.L., and Crawford, R.L. 1992. Mineralization of sulfonated azo dyes and sulfanilic acid by *Phanerochaete chrysosporium* and *Streptomyces chromofuscus*. Appl. Environ. Microbiol. 58: 3598-3604.

1991

- 60) Paszczynski, A., (70%), Pasti, M.B., Goszczynski, S., Crawford, R., and Crawford, D. 1991. New approach to improve degradation of recalcitrant azo dyes by *Streptomyces* spp. and *Phanerochaete chrysosporium*. Enzyme Microbial Technol. 13: 378-384.
- 61) Paszczynski, A., (80%) and Crawford, R.L. 1991. Degradation of azo compounds by ligninase from *Phanerochaete chrysosporium*: Involvement of veratryl alcohol. Biochem. Biophys. Res. Commun. 178: 1056-1063.
- 62) Daniel G., Jellison, J., Goodell, B., Paszczynski, A., (10%) and Crawford, R. 1991. Use of monoclonal antibodies to detect Mn(II)-peroxidase in birch wood degraded by *Phanerochaete chrysosporium*. Appl. Microbiol. Biotechnol. 35: 647-680.

1988

- 63) Paszczynski, A., (80%), Crawford, R.L., and Huynh V-B. 1988. Manganese peroxidase of *Phanerochaete chrysosporium*: purification. Meth. Enzymol. 161(B): 264-270.
- 64) Huynh, V-B., Crawford, R., and Paszczynski, A., (30%). 1988. Assays for extracellular aromatic methoxyl cleaving enzymes for the white-rot fungus *Phanerochaete chrysosporium*. Meth. Enzymol. 161(B): 83-87.
- 65) Paszczynski, A., (60%), Crawford, R., and Blanchette, R. 1988. Delignification of wood chips and pulps by using natural and synthetic porphyrins: models of fungal decay. Applied Environ. Microbiol. 54: 62-68.

1987- 1975

- 66) Fiedurek, J., Paszczynski, A., (20%), Ginalska, G., and Ilczuk, Z. 1987. Selection of amylolytically active *Aspergillus niger* mutants resistant to deoxy-D-glucose. Zbl. Microbiol. 142: 407-412.
- 67) Paszczynski, A., (60%), Rogalski, J., Szczodrak, J., and Dawidowicz, A. 1986. Xylan-containing supports used to separate xylanase from the cellulases of *Aspergillus terreus* F-413. Acta Biotechnol. 6: 153-160.

- 68) Paszczynski, A., (80%), Huynh, V-B., and Crawford, R. 1986. Comparison of ligninase-1 and peroxidase-M2 from the white-rot fungus *Phanerochaete chrysosporium*. Arch. Biochem. Biophys. 244: 750-765.
- 69) Huynh, V-B., Paszczynski, A., (30%), Olson, P., and Crawford, R. 1986. Transformations of arylpropane lignin model compounds by a lignin peroxidase of the white-rot fungus *Phanerochaete chrysosporium*. Arch. Biochem. Biophys. 250: 186-196.
- 70) Paszczynski, A., (60%), Fiedurek, J., Ilczuk, Z., and Ginalska, G. 1985. The influence of proteases on the activity of glucoamylases from *Aspergillus niger* C. Appl. Microbiol. Biotechnol. 22: 434-437.
- 71) Fiedurek, J., Paszczynski, A., (30%), and Ilczuk, Z. 1985. The effects of proteases on the synthesis of glucoamylase from *Aspergillus niger* C. Acta Microbiol. Polon. 34: 25-32.
- 72) Lobarzewski, J., and Paszczynski, A., (50%). 1985. Lignocellulose biotransformation with immobilized cellulase, D-glucose oxidase and fungal peroxidases. Enzyme Microb. Technol. 7: 564-566.
- 73) Paszczynski, A., (80%), Huynh, V-B., and Crawford R.L. 1985. Enzymatic activities of extracellular manganese-dependent peroxidase from *Phanerochaete chrysosporium*. FEMS Microbiol. Lett. 29: 37-41.
- 74) Paszczynski, A., (70%) and Lobarzewski, J. 1984. Modification of peroxidase polymorphism in *Trametes versicolor* fungus after short time incubation under starvation conditions. Biochem. Physiol. Pflanzen. 179: 749-361.
- 75) Fiedurek, J., Ilczuk, Z., and Paszczynski, A., (30%). 1984. The synthesis of amylase by mixed cultures of different strain of moulds. Starch/Starke 36: 358-361.
- 76) Paszczynski, A., (60%), Kochmanska, J., Trojanowski, J., Fiedurek, J., and Ilczuk, Z. Selection of amylolytically active moulds and characterization of amylolytic complex in *Aspergillus niger* C. 1984. Acta Aliment. Polon. 10: 289-300.
- 77) Lobarzewski, J., Paszczynski, A., (40%), Wolski, T., and Fiedurek, J. 1984. Keratin and polyamide-coated matrices as a supports for glucoamylase immobilization. Biochem. Biophys. Res. Commun. 121: 220-228.
- 78) Lobarzewski, J., and Paszczynski, A., (50%). 1983. The catalytical properties of immobilized crude and pure glucoamylase from *Aspergillus niger* C. Biotechnol. Bioeng. 25: 3207-3312.
- 79) Ilczuk, Z., Fiedurek, J., and Paszczynski, A., (10%). 1983. Intensification of amylase synthesis with *Aspergillus niger* by way of multistage mutagenization. Starch/Starke. 35: 397-400.
- 80) Wojtas-Wasilewska, M., Paszczynski, A., (40%) and Trojanowski, J. 1982. Study of induction of oxygenases in *Chaetomium piluliferum* I. The effects of phenolic compounds on the activity of veratrate O-demethylase and protocatechuate 3,4-dioxygenase in mycelium extracts of *Chaetomium piluliferum*. Microbios (Cambridge) 35: 79-89.
- 81) Paszczynski, A., (60%), Miedziak, I., Lobarzewski, J., Kochmanska, J., and Trojanowski, J. 1982. A simple method of affinity chromatography for the purification of glucoamylase obtained from *Aspergillus niger* C. FEBS Letters. 149: 63-66.
- 82) Paszczynski, A., (70%), and Trojanowski, J. 1977. An affinity-column procedure for the purification of veratrate O-demethylase from fungi. Microbios (Cambridge) 18: 111-121.
- 83) Leonowicz, A., Wojtas-Wasilewska, M., and Paszczynski, A., (40%). 1975. Proposals concerning the cultivation of higher fungi on industrial wastes. Polish Technical Rev. 67(3): 6-8.
- 84) Pszczyński, A., (60%), Leonowicz, A., Trojanowski, J., and Wachowicz, A. 1975. Productions of fungal proteins from distillery brew (*in Polish*). Agric. Ferment. Ind. 4: 22-24.
- 85) Leonowicz, A., Trojanowski, J., Wojtas-Wasilewska, M., and Pszczyński, A., (20%). 1975. Cultivation of higher fungi on industrial wastes (*in Polish*). Food Ind. (Poland) 4: 148-152.

Peer Reviewed/Evaluated (currently scheduled or submitted):

1. NICOLE L. UMIKER, JUNGMIN LEE ANDRZEJ J. PASZCZYNSKI, CAROLYN F. ROSS and CHARLES G. EDWARDS. 2011. A SIMPLE EXTRACTION AND GC-MS METHOD FOR QUANTIFICATION OF 4-ETHYLPHENOL PRODUCED IN WINE BY DEKKERA BRUXELLENSIS. *J. Biotechnol.* In revision.
2. Edwards, C.G., J. Lee, N.L. Umiker*, C.F. Ross, and A. Paszczynski. Impact of sulfur dioxide on the culturability, viability, and 4-ethylphenol production of *Brettanomyces* in Syrah wine. *Am. J. Enol. Vitic.* (submitted, 2012).

Professional Meeting Papers, Workshops, Showings and Recitals: Presentation type is indicated next to the presenting coauthor.

1. Checinska, A., (Presentation) Paszczynski, A.J. Development of Supercritical Fluid Carbon Dioxide Sterilization Method Using *Bacillus pumilus* SAFR-032 Endospores. Research presentation presented at the Annual Idaho NASA EPSCoR Meeting, Center for Advanced Energy Studies, Idaho Falls, ID. (2011, May).
2. Checinska, A., (Poster) Deobald, L.A., Paszczynski, A.J. Manganese Catalase Activity in *Bacillus pumilus* SAFR-032 Spores Contributes to Hydrogen Peroxide Resistance. Poster presented at the American Society for Microbiology General Meeting, New Orleans, LA. (2011, May).
3. Paszczynski, A.J., (Invited Presentation) Checinska, A., and Crawford, R.L. Sterilization of *Bacillus* sp. Spores Using Supercritical Fluid Carbon Dioxide Containing Various Modifier Solutions. NASA-ISGC Research Symposium, College of Idaho, Caldwell ID, August 18-19, 2010.
4. Checinska, A., (Poster), Fruth, I., Green, T.L., Crawford, R.L. and Paszczynski, A.J. Development of a new method for sterilization of spacecraft components with supercritical fluid carbon dioxide. NASA-ISGC Research Symposium, College of Idaho, Caldwell ID, August 18-19, 2010.
5. Johnson, K.A., (Poster), Kaczor, J., Han, H., Kaur, M., Tian, G., Rao, L., Qiang, Y., and Paszczynski, A.J. Synthesis of a magnetic hydrogel for use as a high capacity carrier of organic and biological molecules. NASA-ISGC Research Symposium, College of Idaho, Caldwell ID, August 18-19, 2010.
6. Kucharzyk, K. H., (Poster), Crawford, R. L., Paszczynski, A.J., Soule T. and Hess, T.F. A new approach of increasing degradation rates of perchlorate using a Genetic Algorithm: media optimization. 7th International Conference on Remediation of Chlorinated and Recalcitrant Compounds, (Poster –won first place in student poster competition), Monterey, CA, USA. May 24-27, 2010.
7. Johnson K.A., (Poster), Crawford R.L., and Paszczynski A.J. Proteomics of a microbial community from a contaminated aquifer. (Poster –won first place in poster competition) Lessons from Continuity and Change in the Fourth International Polar Year, University of Alaska Fairbanks, March 4 - 7, 2009.
8. Bansal, R., Paszczynski, A.J, (Poster) Deobald, L., and Crawford, R. Quantification of perchlorate and chlorate reducing enzymes using liquid chromatography and mass spectrometry (LC-MS/MS) based methods., US DOD SERDP-ESCP Partners Symposium Workshop, Washington, DC, December 1-3, 2009.
9. Kucharzyk, K., Paszczynski, A.J., (Poster), Ederer, M. Crawford, R. and Hess, T. Use of a Genetic Algorithm to increase degradation rates of perchlorate by single strains and consortia. US DOD SERDP-ESCP Partners Symposium Workshop, Washington, DC, December 1-3, 2009.
10. Johnson A., (Poster), Crawford R.L., and Paszczynski A.J. Proteomics of a Microbial community from a contaminated aquifer. (Poster –won first place in poster competition) Lessons from Continuity and Change in the Fourth International Polar Year, University of Alaska Fairbanks, March 4 - 7, 2009.
11. Paszczynski, A. J., (Presentation), and Crawford, R. Detection of methanotrophic activity in INL Test Area North (TAN) aquifer using ecoproteomics and ecogenomics approaches. INRA Environmental Sensing Symposium, Boise, ID, October 25-26, 2007.
12. Paszczynski, A., (Session Chair). Detection and characterization of microbes and processes they mediate in

- complex environmental niches. Environmental Sensing Symposium, Boise, ID, October 25-26, 2007.
13. Paidiseti, R., (Poster), Johnson, A., Crawford, R., and Paszczynski, A. Using proteomics to sense natural attenuation in INL Test Area North (TAN) Aquifer. Environmental Sensing Symposium, Boise, ID, October 25-26, 2007.
 14. Paszczynski, A.J. (Invited Presentation) and Paidiseti, R. Targeted proteomics approaches to monitor microbial activity in basalt aquifer., American Geophysical Union Fall Meeting, San Francisco, CA, December 10-15, 2007.
 15. Paszczynski, A.J. (Presentation), Zawadzka, A. and Crawford, R. Pyridine-2,6-bis(monothiocarboxylic acid): a siderophore produced by *Pseudomonas stutzeri* precipitates toxic metals and metalloids. INRA, Environmental and Subsurface Science Symposium, Moscow, ID, September 24-27, 2006.
 16. Benardini, J., (Poster), Paszczynski, A.J. and Crawford, R. Monitoring natural attenuation within ground water. INRA, Environmental and Subsurface Science Symposium, Moscow, ID, September 24-27, 2006.
 17. Paidiseti, R., (Poster) Crawford, R. and Paszczynski, A.J. Extracting and identifying protein biomarkers from TCE contaminated ground water. (Poster – won second place in poster competition), INRA, Environmental and Subsurface Science Symposium, Moscow, ID, September 24-27, 2006.
 18. Benardini J., (Poster), Paszczynski A., Venkateswaran, K., and Crawford R. Proteomic analysis of radiation-resistant *Bacillus pumilus* SAFR-032 spores., NASA Idaho Space Grant Consortium Research Symposium, Moscow ID, October 18-19, 2006.
 19. Paszczynski A., (Invited Presentation) Biotransformation of carbon tetrachloride and chelation of heavy metals by novel siderophore isolated from *Pseudomonas stutzeri*. Sensing and processing by neuronal and microbial communities. A Workshop-Symposium Sponsored by U.S. Army Research Office, High Hampton Inn, Cashiers, NC; April 25-28, 2004.
 20. Crawford R. L., Paszczynski, A., Lewis, T., Cortese, M., Lee, C-H., Sebat, J., Green T., and Annaiah, K. Biotic and abiotic interactions between chlorinated solvents, microbial metabolites, and metals: The example of *Pseudomonas stutzeri* KC. Workshop sponsored by US Department of Energy Natural and Accelerated Bioremediation Program Bioremediation Research Program (NABIR). Dulles Airport Marriott, Virginia, October 28-29, 1999.
 21. Goodell, B., (Poster), Liu, J., Jellison, J., Lu, J., Paszczynski, A., and Fekete, F. Chelation activity and hydroxyl radical production mediated by low molecular weight phenolate compounds isolated from *Gloeophyllum trabeum*, p. 591-594. In E. Srebotnik and K. Messner (ed.), Biotechnology in the pulp and paper industry. Recent Advances in Applied and Fundamental Research. Proceeding of the Sixth International Conference on Biotechnology in the Pulp and Paper Industry (ICBPPI). Vienna, Austria, June 11-15, 1995, Facultas-Universitätsverlag, Vienna, 1996.
 22. Paszczynski, A., (Poster), Goszczynski, S., Crawford, R., and Crawford, D. Purification of peroxidases from *Phanerochaete chrysosporium* by affinity chromatography, p. 441-445. In E. Srebotnik and K. Messner (ed.), Biotechnology in the pulp and paper industry. Recent Advances in Applied and Fundamental Research. Proceeding of the Sixth International Conference on Biotechnology in the Pulp and Paper Industry (ICBPPI). Vienna, Austria, June 11-15, 1995, Facultas-Universitätsverlag, Vienna, 1996.
 23. Crawford, R. L., and Paszczynski A.J., (Presentation), Delignification and bleaching of pulps using hydrogen peroxide and iron organic chelant complexes under acidic conditions as a biomimetic approach. p. 50 Proceedings, 4th International Conference on Biotechnology of the Pulp and Paper Industry, Raleigh, N.C., May 16-19, 1989.

Patents:

- 1) Paszczynski A., Lewis, T., Crawford, R. L., and Lee, Ch-H. Chemical compounds that promote degradation of chlorinated organic compounds. European patent 1,254,149. November, 2002.

- 2) Paszczynski A., Goszczynski, S., Crawford, R. L., Crawford, D. L., and Pasti-Grigsby, M. B. Biodegradable azo dyes. U.S. patent 5,618,726. April, 1997.
- 3) Paszczynski A., Goszczynski, S., Crawford, R. L., Crawford, D. L., and Pasti-Grigsby, M. B. Biodegradable azo dyes. U.S. patent 5,486,214. January, 1996.

Grants and Contracts Awarded: The % numbers indicates fraction of my contribution to the given proposal.

- 1) NIH, R15 ES023884 - Identification of functional targets for asbestos-induced autoantibodies. 01/05/2012 through 30/04/2015. \$366,973. (Co-PI, PI Jean Pfau, Idaho State University, help to write proposal, provided proteomics expertise)
- 2) Avista - Laboratory experiments to define the treatment parameters necessary to stabilize Palouse loess soil for installation of transmission lines, power sub-stations and access roads using bio-induced calcite cementation. 6/10/2011 through 9/30/2012. \$ 18,000. (PI)
- 3) NASA-EPSCoR - Investigations of the potential for microorganisms residing on Mars-based spacecraft to inhabit Mars and pose planetary protection challenges. 09/2011 through 08/2014. \$749,997 (half is non-federal match) (PI).
- 4) NSF - Toward commercial PHA production on dairy manure: analysis of mixed microbial consortia to identify critical proteins and metabolisms associated with feast-famine PHA synthesis. 10/2009 through 09/2012. \$ 126,923. (Co-PI, PI E. Cotes, UI Civil Engineering, help to write proposal, provided proteomics expertise, **40%** contribution).
- 5) NASA-EPSCoR – Investigations of the potential for microorganisms residing on the Mars Science Laboratory spacecraft to inhabit Mars. 04/2010 through 08/2012. \$25,014. (Co-PI with PI S. Childers UI Geological Sciences. (PI on this project from June 2010 since Susan left UI, **50%** contribution).
- 6) DOE-AFCI – Conjugates of actinide chelator-magnetic nanoparticles for used fuel separation technology. 09/08 through 09/11. \$416,659 - UI budget (Co-PI with PI Y. Qiang, UI Physics Department. Help to write proposal, provided chemical expertise, manage ~\$200K budget through EBI, **50%** contribution).
- 7) NASA-EPSCoR – Space craft components sterilization using supercritical CO₂. 09/08 through 08/12. \$1,261,530. (half is non-federal match) (Co-PI, R. Crawford PI, UI EBI, I help to write proposal, took over as PI in the last 2 year of the project due to R. Crawford retirement, **50%** contribution).
- 8) NSF Project # 0700918 – Biomineralization within soil to mitigate seismic induced liquefaction. 07/01/07-06/30/2012, \$404,399. (Co-PI, Thomas Weaver Co-PI, Managed postdoctoral researchers in last year of the project **10%** contribution)
- 9) Jet Propulsion Laboratory - Assemblage of metadata linkages of primary mars science laboratory planetary protection samples to archived microbial isolates. 09/18/2010 through 12/31/10. \$ 2,000 (PI)
- 10) US Department of Energy (DOE-ERSP) – Coupled biogeochemical process evaluation for conceptualizing trichloromethane co-metabolism. 03/01/06 through 11/30/09. \$435,000. (Co-PI **30%** contribution with R. Crawford PI, UI EBI).
- 11) US Department of Defense (DOD – SDRDP) – To provide a new, cost-effective, and innovative treatment approach to reduce or eliminate perchlorate from waste waters generated by treatment processes. 09/06 through 09/11. \$ 850,000. (Co-PI with R. Crawford PI, UI EBI; I took over as PI in the last year of the project due to R. Crawford retirement). Help to write proposal, help manage the project and provided analytical expertise, **50%** contribution)

- 12) M.J. Murdock Charitable Trust – To evaluate properties of magnetic nanoparticles-enzyme conjugates. 08/05 through 08/07. \$ 50,000 (PI, EBI, **100%** contribution).
- 13) NSF EPSCoR - To develop new magnetic nanoparticle-enzyme (MNP-E) conjugates. 06/01/05 through 09/01/05. \$7,400. (PI, EBI, **100%** contribution).
- 14) UNESCO - Characterization of Dimethylformamide (DMF) utilizing bacterial strain for the biotreatment of industrial waste water. 01/15/05 through 06/15/05. \$15,000. (PI – **100%** contribution, Fellowship for Dr. Sharapat Nisanbekovna Turekulova, visiting researcher from Institute of Microbiology and Virology in Almaty, Kazakhstan).
- 15) M.J. Murdock Charitable Trust - Proteomics research discovery core facility (to acquire a MALDI TOF-MS/MS instrument). Written and organized proposal provided mass spectrometry expertise – **80%** contribution. 03/05 through 03/06. \$419,000. The matching funds included \$100,000 from NSF-EPSCoR, 70,000 from UI (PI, UI EBI) and \$15,000 from CALS.
- 16) National Institute of Health (NIH) - To examine nature's uncultivated species of microorganisms to discover novel genes involved in contaminant transformation. 10/01/03 through 09/30/06. \$394,031 (Co-PI with R. Crawford PI, UI EBI, **50%** contribution, helped to write proposal provided analytical expertise).
- 17) Inland Northwest Research Alliance (INRA) – Function and environmental significance of microbial siderophore in groundwater detoxification. 08/20/03 through 08/20/05. \$70,000. (PI – graduate student fellowship, **100%** contribution).
- 18) National Science Foundation (NSF) – Chemical Instrument Grants: Purchase of electron spin resonance (ESR) spectrometer. 01/03/03. \$173,515. (Co-PI with other five chemistry faculties, **20%** contribution).
- 19) DOD (DEPSCoR) – In situ genetic modification of natural microbial communities with genes of value for bioremediation. 04/01/00 through 03/31/03. \$337,031. (Co-PI with R. Crawford PI, UI EBI, **40%** contribution, helped to write proposal provided analytical expertise).
- 20) Inland Northwest Research Alliance (INRA) – Molecular characterization of TCE-cometabolizing microbial communities in the Snake River plain aquifer. 10/01/00 through 09/30/03. \$149,782. (Co-PI with PI R. Crawford, UI EBI, **40%** contribution, helped to write proposal provided analytical expertise).
- 21) United States Department of Agriculture – Benzenediols and benzoquinones: roles in wood decay by brown rot fungi, 09/15/99 through 09/30/02. \$150,000. (Co-PI with PI R. Crawford, UI EBI, **50%** contribution, this proposal was based on my research published in 1999, Appl. Environ. Microbiol. 65: 674-679).

Honors and Awards:

- | | |
|-----------|---|
| 1984-1985 | 3M Company Fellowship, College of Biological Sciences, University of Minnesota, Navarre |
| 1980 | Prize of Polish Ministry of Science and Education for distinguished Ph.D. dissertation |
| 1972-1973 | Scholarship for Academic Excellence, University of Marie Curie-Sklodowska, Poland |

SERVICE:

Major Committee Assignments:

University: 2003-2004 Information Technology Committee
 2004-2007 Biological Safety Committee
 2005-2010 Faculty Appeals Hearing Board
 2005- 2006 UI Vice President for Research Electron Microscope Task Force
 2010- Campus Planning Advisory Committee

School of Food Science

2011- School of Food Science (SFS), Graduate Study Committee
 2011- SFS, Faculty (Food Chemist) Search Committees

MMBB Department:

2001-2002 Faculty Search Committees (resulting in hiring of J. Johnson and K. Gustin)
 2004 Tenure and Promotion Committee for Dr. Douglas Cole (resulting in D. Cole receiving tenure and promotion in 2004)
 2005-2007 MMBB Space Assignment Committee
 2006- 2009 MMBB Graduate Admission Committee
 2006 Third year Review Committee for Dr. Jill Johnson
 2006 Chair of third year Review Committee for Dr. Gustavo Arrizabalaga
 2007- 2009 CALS Tenure and Promotion Committee
 2008- 2010 Chair of MMBB Graduate Study Committee
 2008- 2011 Mentoring Committee for Dr. Tanya Miura

Professional and Scholarly Organizations:*Scholarly Organizations:*

Polish Biochemical Society (1975 -present)
 European Federation of Biochemical Societies (1975 - present)
 American Association for the Advancement of Science (1989)
 American Society for Microbiology (ASM) (2005-present)
 American Society for Mass Spectrometry (ASMS) (2011-present)
 Gamma Sigma Delta, Honor Society of Agriculture (2001 – present)
 Member of Editorial Board of the Journal Biodegradation (2005 -- present)
 Member of panel on “Fate and Transport of Selenium in Ground Water”. The panel was held on January 31, 2006 in Moscow, Idaho with video connections to Boise and Pocatello, Idaho.

Ad-hoc reviewer:

Biodegradation; Acta Astronautica; Applied and Environmental Microbiology; Microbiology (UK); Journal of Nanobiotechnology; Bioremediation Journal; Enzyme and Microbial Technology; Environmental Science and Technology; Chemosphere; Biotechnology Progress; Journal of Hazardous Materials; Journal of Applied Microbiology

Ad-hoc reviewer:

Grant proposals submitted to the following agency competitive research grant programs: DOD, DOE, USDA, and Small Business Innovative Research (SBIR) Program

Outreach Service:**Ad-hoc adviser:**

Graduate students in the Department of MMBB, Department of Chemistry, Department of Chemical Engineering, Department of Biological and Agriculture Engineering, Forest Products Department, and the EBI regarding biochemistry, microbiology, analytical spectroscopic methods, and computer modeling of chemical and biochemical molecules.

PROFESSIONAL DEVELOPMENT:**Scholarship:***Attendance at professional meetings and seminars:*

Environmental Subsurface Symposium, Big Sky, MT, September 19-21, 2005

Environmental Subsurface Symposium, Spokane, WA, September 20-22, 2004

Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 24-27, 2004

U.S. Army Research Office Workshop-Symposium, Cashiers, NC, April 25-28, 2004

Superfund Basic Research Program Annual Meeting, University of Washington, Seattle, November 3-4, 2004

Symposium on Recent Advances in Lignin Biodegradation and Biosynthesis and 8th International Conference on Biotechnology in Pulp and Paper Industry, Helsinki, Finland; June 3-8, 2001

Society for Industrial Microbiology Annual Meeting, San Diego, July 23-27, 2000

US Department of Energy Natural and Accelerated Bioremediation Program Bioremediation Research Program (NABIR) Workshop, Dulles Airport Marriott, Virginia, October 28-29, 1999

Sixth International Mycological Congress IMC6, Jerusalem, Israel, August 23-28, 1998

Fourth International Symposium on In Situ and On-Site Bioremediation, New Orleans, Louisiana, April 28-May 1, 1997

Third International Symposium on In Situ and On-Site Bioremediation, San Diego, California, April 28-May 1, 1995

Languages Spoken:

Polish: Fluent speaking, writing and reading

English: Good writing, speaking and reading

Russian: Good reading and speaking

Slovak: Good speaking

Administration/Management:

From 2000 to 2011 I was the Associate Director of the Environmental Biotechnology Institute (EBI), Responsibilities include management of external users of EBI analytical laboratories; provide expertise in analyzing and interpretation of mass spectrometry (proteomic), spectrophotometric, and fluorometric data.