BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Ann M. Richard	Research Chemist
eRA COMMONS USER NAME	

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
State University of New York at Oswego, NY	B.A./B.S.	1978	Math/Chemistry
University of North Carolina at Chapel Hill, NC	Ph.D.	1983	Physical Chemistry

A. POSITIONS and HONORS

Research and Professional Experience:

2005-present Principal Investigator, NCCT, US EPA, RTP, NC
1999-2005 Research Chemist, Molecular Toxicology Branch, ECD/NHEERL, US EPA, RTP, NC
2001-2002 Acting Chief, Molecular Toxicology Branch, ECD, NHEERL, US EPA, RTP, NC
1997-1999 Res. Chemist, Biochemistry Pathobiology Branch, ECD, NHEERL, US EPA, RTP, NC
1987-1997 Res. Chemist, Carcinogenesis Metabolism Branch, HERL, US EPA, RTP, NC

Professional Societies and Affiliations:

American Association for the Advancement of Science, QSAR & Modeling Society, Genetics & Environmental Mutagen Society, International Society for Quantum Biology & Pharmacology, Society for Biomolecular Screening

Honors and Awards:

NHEERL Strategic Goal 4: Leadership in the Scientific Community, Plan Team Award, 2000
NHEERL Special Award for Developing Process for Advancing NHEERL Genomics & Proteomics Program
Superior Achievement Cash Awards, 2001, 2002, 2003, 2005, 2006, 2007
NHEERL Strategic Goal 5 Award: Future Issues, Genomics, Proteomics & Bioinf. Program, 2003
CompTox Program 1-yr Augmented Funding Award for DSSTox Database Project Expansion, 2004-2005
CompTox Program New-Start Research Award for CEBS/DSSTox Collaboration Project, 2005-2008
ORD Science & Technology Achievement Award, Level III, 2006
ORD Communication Award, 2006

Selected invitations at National & International Symposia:

Soc. of Toxicology, Hazardous Air Pollutants Symposium, Nashville, TN, 3/02
CBI's 3rd Annual Predictive Toxicology Symposium, Philadelphia, PA, 6/02
Research Triangle Institute Seminar Series, 6/02
ILSI - HESI Structure-Activity Relationship (SAR) Database Subcommittee Meeting, Washington, DC, 6/02
Tox. Forum Session:"The Role of QSARs in Hazard Assessment", Aspen, CO, 7/02
LeadScope ToXML Focus Group Meeting, Columbus, OH, 11/02
Predicting Acute Toxicity Workshop, Armed Forces Intelligence Committee, McLean, VA, 4/03
Environmental Mutagen Society Annual Meeting, Predictive Toxicology Symposium, Miami, FL, 5/03
IBC Predictive ADME/Tox, London, UK, 6/03
National Cancer Institute: Workshop on Government Databases, Bethesda, MD, 7/03
American Chemical Society National Meeting, Computational Toxicology Symposium, New York, NY, 9/03
ADMET-1 Conference, San Diego, CA, 2/04
EPA 2005 Science Forum, Emerging Technologies, 5/04
ADMET-2 Conference, San Diego,CA, 2/05
Soc. of Toxicology, Public Database Resources, New Orleans, LA, 3/05

ILSI – HESI Developmental Toxicity Database Workgroup Meeting, Washington, DC, 3/05
Chemoinformatics Symposium, NC Central University, Durham, NC, 4/05
NSF International Health Advisor Board Meeting, Ann Arbor, MI, 4/05
National Cancer Institute Workshop on Government Databases, Fredrick, MD, 7/05
American Chemical Society National Meeting, International Science Policy Symposium, Washington, DC, 8/05
Int. Congress of Environ. Mutagens, San Francisco, CA, 9/05
Data in Life Science Workshop, European Science Agency, Milan, Italy, 11/05
ISRTP Workshop, Progress & Barriers to Incorporating Alt Tox Methods in the US, Baltimore, MD, 11/05
Leadscope In Silico Toxicology Consortium, Bethesda, MD, 4/ 2006
EU Project on the Collection & Evaluation of (Q)SAR Models for Mutag. and Carcinog.; Rome, Italy, 6/2006
LHASA International Collaborative Group Meeting, Washington DC, 9/2006
EPA STAR Graduate Fellowship Conference, Washington DC, 9/2006
Vanderbilt University, Institute for Chemical Biology, Dept. Seminar, Nashville, TN, 2/2007
Soc. for Biomolecular Sci., Toxicity Profiling Using HTS and HCS Technologies, Montreal, Canada, 4/2007
Teratology Society Annual Meeting, Pittsburg, PA, 6/2007
Comp. Methods in Toxicology & Pharmacology: Integrating Internet Resources, Moscow, Russia, 9/2007
Int. Society of Exposure Analysis Annual Meeting, Durham, NC 10/2007
eCheminfo Workshop on Predictive ADMET & Toxicology, Philadelphia, PA, 10/2007
Genetics & Environmental Mutagenesis Society Meeting, Chapel Hill, NC, 10/2007
Health Canada's New Substances Assessment & Control Bureau, Ottawa, Canada, 11/2007

Selected Expert Committees/Advisory Panels/Organizing Committees:

Editorial Board, Mutation Research, 1994-present.
Editorial Board, Chemical Research in Toxicology, 1999-2002, 2003-2005, reappointed for 2008-2010.
Manuscript reviewer: *Bioinformatics, Carcinogenesis, Chem.l Res. Tox., Chemico-Biol.l Interact., Chemosphere, Environ. Molec. Mutag., Environ. Health Perspec.s, Environ.l Tox. Chem., J. Chem. Info. Comp. Sci., J. Amer. Chem. Soc., J. Comp. Chem., Mutat. Res, SAR QSAR Environ. Tox., Sci. Total Environ., Toxicology, Tox. Sci., Regul. Tox. Pharmacol.*
Advisory committee for Predictive Toxicity Challenge I, Freidburg, Germany, 2001
ILSI-Health Effects Sci. Inst. Working Group on SAR Toxicity Database, 2002
Organizing Committee, Prediction of AcuteToxicity Workshop, Mclean, VA, May 5-7, 2003
OECD Workgroup on Use & Regulatory Acceptance of QSARs, 2003-present
Organizing Committee, ADMET I Conference, San Diego, Feb. 11-13, 2004
Organizing Committee, International Congress on Environ. Mutagenesis, San Francisco, Sept., 2004
LeadScope LIST Workgroup for Implementation of ToxML standard ontologies, Mar 2004-2006
Review Committee, TERA – Health Canada QSAR Advisor Review Board, Apr 2005
ILSI Working Group on Prediction of Developmental Toxicity, 2002-present
LHASA VITIC SAR Database Advisory Committee, 2005
National Toxicology Program High Throughput Screening Assays Workshop, Arlington, VA, 12/05
EU Project on Evaluation of (Q)SAR Models for Mutagenicity & Carcinogenicity; Rome, Italy, June 22-23, 2006
Developmental Neurotoxicity Database Workshop, RTP, NC, Nov 14-15, 2006
Organizing Committee, Comp. Methods in Toxicology & Pharmacology, Moscow, Russia, 9/2007

Selected Assistance/Advisory Support to the Agency:

ORD Strategy Goal3 Team - Leader in Environmental Research, 1999
NHEERL Strategy Goal3 Team - Leader in Environmental Research, 1999
NHEERL Multi-Year Implementation Planning Committee for Goal 4 - Safe Communities, 2001
NHEERL Genomics and Proteomics Steering Committee, 2001-2002
NHEERL Genomics & Proteomics Committee Member, Bioinformatics Coordinator, 2002-2004
EPA Goal 4 Safe Pesticides/Safe Products Multi-Year Plan Steering Committee, 2003-present
EPA Research & Science Architecture (RST) Target Workgroup, 2003-present
Chemoinformatics Communities of Practice Coordinator, 2005-present
EPA Hiring Committee Lead for Senior Title 42 NCCT Bioinformatics Hire, 2006
EPA Science Connector Workgroup, NCCT Representative, 2007

B. SELECTED PUBLICATIONS (selected from 52 total).

Shim, J.Y., Richard, A.M. Theoretical study of the nucleophilic vinylic substitution reaction of trichloroethylene (TCE) + CH3S- as a model for glutathione conjugation of TCE, Chem. Res. Toxicol. 12:308-316, 1999.

Richard, A.M. Application of Artificial Intelligence and Computational Methods to Predicting Toxicity, Knowledge Engineering Rev. 14:307-317, 1999.

Shaughnessy, D.T., Ohe T., Landi, S., Warren, S.H., Richard, A.M., Munter, T., Franzén, R., Kronberg, L., DeMarini, D.M. Mutation spectra of the drinking water mutagen 3-chloro-4-methyl-5-hydroxy-2(5H) - furanone (MCF) in Salmonella TA100 and TA104: Comparison to MX. Environ. Molec. Mutag. 35:106-113, 2000.

Richard, A.M., Bruce, R., Greenberg M. SAR methods applied to chemical toxicity: Making better use of what we have, in Progress in the Reduction, Refinement and Replacement of Animal Experimentation. Eds. Balls, M., van Zeller, A.M., Halder, M.E. Elsevier Science B.V. pp. 457-468, 2000.

McKinney, J.D., Richard, A.M., Waller, C., Newman, M., Gerberick F. The practice of Structure Activity Relationships (SAR) in Toxicology. Toxicol. Sci. 56:8-17, 2000.

DeMarini, D.M. , Landi, S., Ohe, T., Shaughnessy, D.T., Franzén, R., Richard, A.M. Mutation spectra in Salmonella of analogues of MX: Implications of chemical structure for mutational mechanisms. Mutat. Res. 453:51-65, 2000.

King, L.C., Kohan, M.J., Brooks, L., Nelson, G.B., Ross, J.A., Allison, J., Adams, L., Desai, D., Amin, S., Padgett, B., Lambert, G.R., Meyers, F., Richard, A.M., Nesnow, S. An Evaluation of the Mutagenicity, Metabolic Activation and DNA Adduct Formation of 5-nitrobenzo[b]naphtho[2,1-d]thiophene. Chem. Res. Toxicol. 14:661-671, 2000.

Swartz, P., Richard, A.M. Use of structure-activity relationships for probing biochemical mechanisms: glutathione transferase zeta conjugation of haloacids, in Biological Reactive Intermediates VI: Chemical and Biological Mechanisms in Susceptibility to and Prevention of Environmental Diseases. Eds. Dansette, P.M., Snyder, R.R., Monks, T.J., Jollow, D.J., Sipes, G., Greim, H., Gibson, G.G., Delaforge, M. Advances in Experimental Medicine and Biology. 500:23-31, 2001.

Richard, A.M., Benigni, R. AI and SAR approaches for predicting chemical carcinogenicity: Survey and status report. SAR and QSAR in Environ. Res. 13:1-19, 2002.

Richard, A.M., Williams, C.R. Distributed structure-searchable toxicity (DSSTox) database network: A proposal. Mut. Res. 499:27-52, 2002.

Richard, A.M., Williams, C.R., Cariello, N. Improving structure-linked access to publicly available chemical toxicity information. Curr. Opinion Drug Devel Discov. 5:136-143, 2002.

Tamura, H., Yoshikawa, H., Gaido, K., Ross, S.M., DeLisle, R.K., Welsh, W.J., Richard, A.M. Interaction of organophosphate pesticides and related compounds with the androgen receptor. Environ. Health Perspec. 111:545-552, 2002.

Richard, A.M., Williams, C.R. Public sources of mutagenicity and carcinogenicity data: Use in structure-activity relationship models. In QSARs of Mutagens and Carcinogens. Ed. Benigni, R., CRC Press, NY pp. 145-173, 2002.

Richard, A.M. DSSTox Website launch: Improving public access to databases for building structure-toxicity prediction models. Preclinica, 2:103-108, 2004.

Balu, N., Padgett, W.T., Lambert, G., Swank, A.E., Richard, A.M., Nesnow, S. Identification and characterization of novel stable deoxyguanosine and deoxyadenosine adducts of benzo[a]pyrene-7,8-quinone from reactions at physiological pH. Chem. Res. Toxicol. 17:827-838, 2004.

Kundu, B., Richardson, S.D., Swartz, P.D., Matthews, P.P., Richard, A.M., DeMarini, D.M. Mutagenicity in Salmonella of Halonitromethanes: A Recently Recognized Class of Disinfection By-products in Drinking Water. Mutat. Res. 562:39-65, 2004.

Kundu, B., Richardson, S.D., Granville, C.A., Shaughnessy, D.T., Hanley, N.M., Swartz, P.D., Richard, A.M., DeMarini, D.M. Comparative Mutagenicity of Halomethanes and Halonitromethanes in Salmonella TA100: Structure-Activity Analysis and Mutation Spectra. Mutat. Res. 554:335-350, 2004.

Julian, E., Willhite, C.C., Richard, A.M., DeSesso, J.M. Challenges in Constructing Statistically-Based SAR Models for Developmental Toxicity. Birth Defects Research Part A, 70:902-911, 2004.

Granville, C.A., Ross, M.K., Tornero-Valez, R., Hanley, N.M., Grindstaff, R.D., Gold, A., Richard, A.M., Funasaka, K., Tennant, A.H., Kligerman, A.D., Evans, M.V., DeMarini, D. Genotoxicity and metabolism of the source-water contaminant 1,1-dichloropropene: Activation by GSTT1-1. Mutat. Res. 572:98-112, 2005.

Fostel, J., Choi, D., Zwickl, C., Morrison, N., Rashid, A., Hasan, A., Bao, W., Richard, A., Tong, W., Bushel, P., Brown, R., Bruno, M., Cunningham, M., Dix, D., Eastin, W., Frade, C., Garcia, A., Heinloth, A., Irwin, R., Madenspacher, J., Merrick, A., Papoian, T., Paules, R., Rocca-Serra, P., Sansone, A., Stevens, J., Tomer, K., Yang, C., Waters, M. Chemical Effects in Biological Systems – Data Dictionary (CEBS-DD): A Compendium of Terms for the Capture and Integration of Biological Study Design Description, Conventional Phenotypes and 'Omics Data. Tox. Sci., 88:585-601, 2005.

Hunter, S.E., Rogers, E., Blanton, M., Richard, A.M., Chernoff, N. Bromochloro-haloacetic acids: Effects on mouse embryos in vitro and QSAR considerations, Birth Defects Research Part A, 21:260-266, 2005.

Yang, C., Richard, A.M., Cross, K.P. The art of data mining the minefields of toxicity databases to link chemistry to biology. Curr Comput-Aided Drug Design, 2(2):135-150, 2006.

Richard A.M., Gold, L.S., Nicklaus, M.C. Chemical structure indexing of toxicity data on the internet: Moving towards a flat world. Current Opinion in Drug Discovery & Develop., 9(3), 2006, 314-325.

Richard A.M. Future of Predictive Toxicology: An Expanded View of "Chemical Toxicity" - Future of Toxicology Perspective. Chem. Res. Toxicol., 19:1257-1262, 2006.

Dix, D.J., Houck, K.A., Martin, M.T., Richard, A.M., Setzer, W., Kavlock, R.J. The ToxCast program for prioritizing toxicity testing of environmental chemicals. Tox. Sci., 95:5-12, 2007

Benigni, R., Netzeva, T.I., Benfenati, E., Bossa, C., Franke, R., Helma, C., Hulzebos, E., Marchant, C., Richard, A., Woo, Y.T., Yang, C. The expanding role of predictive toxicology: an update on the (Q)SAR models for mutagens and carcinogens. J. Environ. Sci. Health C Environ. Carcinog. Ecotoxicol. Rev., 25:53-97, 2007.

Benigni, R., Bossa, C. Richard, A.M., Yang, C. A novel approach: Chemical relational databases, and the role of the ISSCAN database on assessing chemical carcinogenicitiy. Annali dell' Instituto Superiore di Sanita, 2007.

DSSTOX WEBSITE & PUBLICATIONS

Richard, A.M., EPA DSSTox Website, launched March 2004; most recent update October 2007: https://www.epa.gov/ncct/dsstox/

Richard, A.M., Transue, T., EPA DSSTox Structure-Browser, launched August 2007; most recent update October 2007: http://www.epa.gov/dsstox_structurebrowser/

Published DSSTox Data Files: http://www.epa.gov/ncct/dsstox/DataFiles.html (4 of 10 published DSSTox Data Files listed below):

i. Gold, L.S., Slone, T.H., Williams, C.R., Burch, J.M., Stewart, T.W., Swank, A.E., Beidler, J.,Richard, A.M. DSSTox Carcinogenic Potency Database Summary Tables for Rats and Mice, Hamsters, Dogs, and Non-Human Primates, SDF Files and Documentation, 2003; updated 2007: CPDBAS_v5a_1527_25Oct2007; http://www.epa.gov/ncct/dsstox/sdf_cpdbas.html

ii. Smith, C., Collins, B., Tice, R., Wolf, M.A., Richard, A.M. DSSTox National Toxicology Program High Throughput Screening Structure-Index File: SDF File and Documentation, 2006; updated 2007: NTPHTS_v2a_1408_25Jul2007: http://www.epa.gov/ncct/dsstox/sdf_ntphts.html

iii. Houck, K., D. Dix, R. Judson, M. Martin, M. Wolf, R. Kavlock, and A.M. Richard (2007) DSSTox EPA ToxCast High Throughput Screening Testing Chemicals Structure-Index File: SDF File and Documentation, 2007, updated: TOXCST_v2a_320_25Sep2007, http://www.epa.gov/ncct/dsstox/sdf_toxcst.html

iv. Backus, G.S, Wolf,, M.A., Burch, J., Richard, A.M. DSSTox EPA Integrated Risk Information System (IRIS) Toxicity Review Data: SDF File and Documentation, 2007: IRISTR_v1a_544_28Jul2007, www.epa.gov/ncct/dsstox/sdf_iristr.html