

Speaker CV

Yang C. Fann, Ph.D.

NINDS/NIH/HHS
35 Convent Drive, GD717
Bethesda, MD 20892
Email: fann@mail.nih.gov

BRIEF CHRONOLOGY OF EMPLOYMENT:

2002 - Present	Director, Intramural IT and Bioinformatics Program , National Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health (NIH), Bethesda, MD.
2014 – Present	Member, NIH Executive IT Budget Advisory Committee (IT-BAC) , Bethesda, MD.
2014 – Present	Associate Editor , <i>Computer Methods and Programs in Biomedicine</i> , Elsevier Publisher.
2012 – Present	Co-Chair, NIH High Performance Computing and Network Working Group , Bethesda, MD
2012 - Present	Member, NIH Biomedical Informatics Coordination (BMIC) Working Group , Bethesda, MD
2012 – Present	Member, Clinical Center IT Advisory Group (ITAG) , NIH, Bethesda, MD.
2009 – Present	Principle Investigator , Informatics Core, The Center for Neuroscience and Regenerative Medicine (CNRM), National DoD/NIH TBI Research Program, Bethesda, MD.
2007 – Present	Co-Chair, Clinical Center TRIS Steering Committee , NIH, Bethesda, MD.
2006 – Present	Member, NCBI Bioinformatics Resources Advisory Committee , NIH, Bethesda, MD.
2002 - Present	NIH Bioinformatics Core Faculty , National Center for Biotechnology Information (NCBI), National Library of Medicine, National Institutes of Health, Bethesda, MD
2003 – 2009	Member, Title 42 Steering Committee for Center for Information Technology , NIH, Bethesda, MD
2003 – 2005	Member, Trans-NIH Informatics Committee (TNIC) for NIH Roadmap - NECTAR , NIH, Bethesda, MD.
1999 – 2002	Senior Science Task Manager , Information Technology Support Services, OAO Corporation/National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, NC
1997 – 1998	Science Task Manager/Scientific Research Consultant , Information Technology Support Services, OAO Corporation/National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, NC
1995 – 1996	Postdoctoral Associate , Center for Molecular Design, Institute of Biomedical Computing, School of Medicine, Washington University in St. Louis, MO
1995 – 1996	Part-time Consultant , Software Development and Testing Group, Tripos Inc., St. Louis, MO
1992 – 1994	Postdoctoral Fellow , Department of Chemistry, Northwestern University, IL

CITIZENSHIP: United States of America

EDUCATION:

Research Associates (Comp. Biology)	Washington Univ. in St. Louis, MO	1995 - 1996
Postdoc (Protein Structure/Biochem.)	Northwestern University, Evanston, IL	1992 - 1995
Ph.D. (Computational Chemistry)	Temple University, Philadelphia, PA	1988 - 1992
B.S. (Chemistry)	Tamkang University, Taipei, Taiwan	1980 - 1984

PROFESSIONAL COMPUTER SKILL:

- Programming Language: Visual C++, VB, Java/JSP, XML/HTML, FORTRAN, Bio/Perl, and SQL.
- Operating System: IRIX/SGI, Redhat Linux, Sun/Solaris, Mac OS, Windows OS.
- Bioinformatics: RNA-seq, NGS data analysis, Integrative Computational Biology, Microarray and Proteomics (MS) Analysis, Pathway Studio, CLCBio, GenSpring, VectorNTI, SAS/JMP, EMBOSS, SWISSPROT, NCBI Tools.
- Databases: MS Access, FileMaker Pro, MS SQL, MySQL, and Oracle
- Computation & Modeling: Sybyl, MacroModel, UNITY, DISCO, MatchMaker, Composer, QSAR, DOCK, CoMFA, TRIAD, TINKER, AMBER, QUANTA/CHARMM, MSI/InsightII, ISISDraw, WebLab, Swiss PDB viewer, Alchemy2000, GAMESS, Gaussian9x, Spatan, MOPAC, EHMACC, etc.
- Biomedical Engineering: Equipment/Computer interfaces, Digital/analog conversion with PC data acquisition, LabView interfaces.

PROFESSIONAL TRAINING:

- NIH Executive Leadership Training Program (EXLP) Sept 2013
- NINDS Senior Leadership Development Program (NINDS/NIH) June 2005
- Evaluation Theory for Biomedical Informatics (NLM/NIH) Feb. 2005
- Computer Security Leadership Essentials for Managers (SANS Institute) July 2003
- NCBI Bioinformatics Core Faulty Training (NCBI/NIH) Sept. 2002
- Project Management Training and Certified (NIEHS) Oct. 2001
- Computer Based Training (CBT) for Windows Server Management 1998-2001
- Business Management Series Training (staff conflicts, negotiation, etc.) 1998-2001
- BioPerl Programming Training (NIEHS) July 2001
- Java Programming Training (Sun Microsystem) Feb. 1999
- Techniques of HPLC and certification (Hewlett Packard, GA) June 1998
- Bruker ESR Service and Maintenance (Certified) August 1997
- IBM 3090-600E supercomputer OS training and FORTRAN code vectorization. June 1990

PROFESSIONAL SOCIETY AND COMMUNITY SERVICES:

- International Human Proteomics Organization (HUPO) 2006-present
- Health Level Seven (HL7) USA 2003-present
- International Society for Computational Biology (ISCB) 2002-present
- American Association for the Advancement of Science (AAAS) 1998-present
- Task Member of IUPAC for EMR Data Standard Task Workgroup 1999-2005
- Triangle NT and UNIX User Groups 1999-2002
- International EPR Society 1998-2002
- Volunteer Language Service Manager for Special Olympic World Game 99 (NC) Jun 1999

HONORS AND AWARDS:

- NIH CIT Director Award on Biomedical Research System Innovations 2015
- HHS Green Champion Leadership Award 2014
- NIH Director Award for Porter Neuroscience Building Operation 2014
- NIH Director Award for Intramural Research Program Leadership Team 2013
- NIH OD Honor Award on "I am Intramural Campaign" 2012
- NIH Director's Award for Leveraging Efficiencies in Scientific Administration Team 2012
- HHS Secretary's First Innovation Award 2010

- NINDS/NIH Director's Award for Neurological Common Data Elements Project 2010
- NINDS/NIH Group Merit Award for e-Stroke and IT Contract 2009
- NIH Director's Award for web tools supporting scientific research 2008
- Bio-IT World Best Practice Award for Clinical Research (Honorable) 2008
- NINDS/NIH Group Merit Awards for Bioinformatics 2008
- NINDS/NIH Group Merit Awards for Clinical Research Support 2007
- NINDS/NIH Group Merit Awards for procurement automation 2005
- Outstanding Management and Performance Award – ITSS/NIEHS 2001
- Outstanding Management and Achievement Award – ITSS/NIEHS 2000
- Science Task Award for Excellent Performance – ITSS/NIEHS 1999
- Outstanding Performance and Management Award – ITSS/NIEHS 1998
- University Honor of Dissertation Completion Fellowship 1992
- Guy Allen Outstanding Teaching Award 1991
- Graduate School Honor Summer Fellowship Awards 1991
- Temple U Swern Graduate Fellowship Award 1990

RESEARCH/WORK ACCOMPLISHMENTS:

Director, Intramural IT and Bioinformatics Program
(NINDS/NIH, Bethesda, MD)

May 2002 - Present

- Directs intramural IT scientific computing infrastructure support services for both basic and clinical neuroscience programs (over 900 scientists and staff) as well as NEI IRP, NCCAM IRP and NIMH PNRC research staff. Manage IT budget and oversees IT support service contracts and supervises over 35 IT and scientific support staff.
- Directs a shared neuroscience bioinformatics research resource and application support, including experimental design, data analysis, collaboration and consultations in the area of microarray, genotyping, comparative and functional genomics, proteomics, RNA-seq and next generation sequencing for NINDS and NIMH intramural investigators and research staff.
- Serves as an PI for the informatics core of The Center for Neuroscience and Regenerative Medicine (CNRM), a DOD/NIH collaborative research program developed to bring together the expertise of clinicians and scientists across disciplines to catalyze innovative approaches to traumatic brain injury (TBI) research
- Directs, designs and co-manages resources to develop a new sustainable Integrated Biomedical Informatics System (IBIS), an international collaborative development project, for supporting translational biomedical research
 - Modularized architecture
 - Scientific Administration tools (PTMS/PAT)
 - Clinical Informatics System for Trials and Research (CiSTAR)
 - Data Repository System and Tools (BRICS)
 - Common data elements (CDE), Global Unique Identifier (GUID), Imaging processing tools, etc.
- Directed, designed and managed the development of the Clinical Informatics and Management System (CIMS), an integrated bioinformatics and clinical informatics database system, to support protocol review, clinical trials/studies and translational neuroscience research at NINDS/NIH. There are four modules in CIMS:
 - Protocol Tracking and Management System (PTMS): allows PIs to electronically submit clinical protocols via simple web interface for scientific and IRB reviews and allows IRB office to manage protocols throughout the life time of clinical studies. The PTMS is currently used for consolidated NIH IRBs to track and manage over 1500 multi-IC protocols. The system is also adopted by over 80% of IRB at NIH.
 - Clinical Study Information System (CSIS): A centralized data entry and study management system for all clinical studies including randomized clinical trials. PIs can design and generate case report forms (CRF) online, design protocol mapping, manage patient recruitment and data capture for various data types including genetics, physiology, bioinformatics, MRI, etc.
 - Specimen Tracking and Management System (STAMS): A web based system used by investigators and research staff for their sample tracking and management; including multi-center trials and clinical sample reporting tool
 - Data Discovery and Mining: A collection of graphical and analytical tools for data statistics and mining for all clinical studies. Data can be analyzed across various clinical protocols and data from different bioinformatics databases.

- Directed the development of integrated bioinformatics database systems in collaboration with investigators, such as EvoPrinter, StemCell DB, Connectome Neuro-circuitry, Ebola and ClinicPrint Genomic tools
- Directed the bioinformatics data coordination center for Multiple Sclerosis (MS) BioMarker study as part of a large multi-center, double-blind randomized Phase III clinical trial. Created a centralized dashboard for tracking patient recruitment and samples as well as clinical data flow from multi-center research facilities to our central database system. Coordinated over 80 national medical centers to manage patient/sample information from clinical trial data center (UAB) and the biospecimen storage facility (SAIC).
- Participated in extramural planning group on common data elements for NINDS clinical trials; NIH-wide biomedical informatics projects such as caBIG, CC BTRIS; NIH CTSA; HHS Health IT initiatives, FHA and non-profit HL7 working groups such as RCRIM and Clinical genomics as well as CDISC data harmonization working group.
- Direct intramural bioinformatics and computational biology research and support; supervise clinical informatics projects as well as IT support resources for intramural research programs at NINDS.
- Represents NINDS in the central NIH IT management committee (ITMC) for policy and strategic planning including security, networking, helpdesk and consolidated IT infrastructures. Facilitated and coordinated in many department (DHHS) wide IT initiatives, infrastructure and consolidation projects within NIH.
- Leads the NIH biomedical informatics domain team and participate in the NIH IT enterprise architecture review board to set standards across various IT domains.
- Directs and leads NIH-wide Purchasing on-line tracking system (POTS), head the user committee to share the best practices to achieve administrative efficiency.
- Directs, plans and implements NINDS Intramural travel approval and tracking system as well as personnel and administration support system to reduce the administrative burdens for researchers.
- Directs and organizes annual biomedical informatics and statistics training programs for intramural scientists and a central scientific computing facility to support our biomedical informatics research and imaging applications.
- Consolidated IT network and server infrastructure via virtualization to gain efficiency and save cost.
- Directs the design and implementation of Voice-over-IP project to save telecomm cost and enable our researchers with better communication and collaboration tools.

Senior Science Task Manager

Jan 1999 – Apr 2002

(ITSS/NIHES/NIH, Research Triangle Park, NC)

- Supervised and managed 15 Ph.D./M.S. science and IT personnel to provide institute with research and scientific computing supports ranging from Bioinformatics (System Admin, Statistics Analysis and database programming), Proteomics, Molecular Modeling/Dynamics, GCG Analysis, egSNP Database Development, Granite and Sirius Management Database support for animal facility, NMR, Photochemistry and Photobiology, Biophysics, Structural Biology and UNIX/NT sysadmin support as well as scientific software training.
- Provided leadership and technical consultation to IT support services to meet the instructional, research and administrative needs of the Institute.
- Provided consultations and technical support to the scientific computing lab (SCL) to assess scientific software and support their training needs.
- Planned, designed and implemented distributed computing (desktops and clusters) infrastructure to support scientific computing, bioinformatics and administrative information management.
- Provided resource, strategic and IT infrastructure planning on all scientific research support area including evaluation of scientific software and hardware as well as information management systems for the Division of Intramural Research (DIR).
- Overseen and coordinated among IT technical staff (networking, hardware, software, library and help desk) to provide IT services and supports for Division of Intramural Research (DIR/NIHES).
- Coordinated among National Center for Toxicogenomics, National Toxicology Program and Division of Intramural Research to consolidate scientific computing and informatics resources for the Environmental Genome Project.
- Served as a member of IT Infrastructure Working Group to plan, design and implement the IT strategies, policies and infrastructures for the Institute.
- Served as a member of bioinformatics faculty to advise on the information technology and resource planning to DIR scientists on database management and programming for bioinformatics research.
- Managed and administrated all science task support area as part of information technology support services (ITSS) contract including informatics database development, scientific computing facility and web technology for DIR/NIHES.
- Coordinated and facilitated among institute scientists and support staffs to develop and carry out new Institute research/ computing initiatives for the Environmental Genome Project.

- Designed ColdFusion/Oracle web interfaces and databases for Institute scientific conferences and information management systems.
- Designed and maintained institute-wide Scientific Research Tools and Resources web services. (<http://www.niehs.nih.gov/science/>).
- Created a new web search engine (cgi) for multi-lab database access and management systems.
- Designed and implemented a scientific software server and develop instructional/training materials to provide institute scientists with licensed and public scientific research tools and programs.
- Provided monthly, quarterly and annual written reports on the contract support area and achievements to the contract management, project officer and the scientific director.
- Setup a mirror server for Swiss PDB viewer (<http://spdbv.niehs.nih.gov/>) and automated the PDB/sequence search for structural analysis.
- Created a web vacation/leave calendar (perl) for task staff management.

Task Manager/Senior Scientific Research Consultant:
(ITSS/NIEHS/NIH, Research Triangle Park, NC)

Jan. 1997- Dec. 1998

- Managed and administrated 9 Ph.D./M.S. professionals to provide institute with research and scientific computing supports ranging from Molecular Modeling/Dynamics, GCG Analysis, egSNP Database Development, NMR, Photochemistry and Photobiology, Biophysics, Structural Biology and UNIX/NT sysadmin support as well as scientific software training.
- Provided daily and routine tasks on staff management, resource utilization, and budget management.
- Provided technical research supports on instruments with equipment/computer interfaces, computer hardware and software and programming on spectral simulation and data analysis programs for the Free Radical Metabolite and Photochemistry/biology sections at Lab. of Pharm. & Chem. of NIEHS/NIH.
- Developed and maintained the Lab. Information Database systems (Lab. Data Management System, Spin-trapping Database, International ESR Software Database, Chemical Database and Publication Database)
- Conducted research on drug metabolites and free radicals in the area of toxicology and environmental health, oxidative stress and DNA/protein damages as well as HIV/ADIS research.
- Programming on a new spectral simulation suite for EPR data analysis in Visual C++/MFC.
- Conducted free radical research with Duke/VA researchers on the detection of nitrosyl hemoglobin in Leukemia patients treated with hydroxyurea.
- Conducted research on structural and functional studies of radical/protein complexes by NMR and molecular modeling techniques.
- Setup, administrated, and maintained group-wide UNIX/Linux/Windows NT servers, networking and computing/modeling software.
- Designed and implemented web interfaces for all above database accesses (internet and intranet).
- Designed and administrated Group Internet web server (<http://epr.niehs.nih.gov/>).
- Supervised Postdocs and technicians for free radical metabolites research.

Postdoctoral Research Associate: (NIH Neuropharmacology Fellowship)

Oct.1995-Dec.1996

(Center for Molecular Design, Institute of Biomedical Computing, School of Medicine, Washington Univ. in St. Louis, MO)

- Structural and functional studies of Neurokinin (NK1) receptor- a 7 transmembrane G protein coupled receptor by double spin labeled EPR, ¹⁹F NMR and solid-state NMR.
- Built the 3D structure of Rhodopsin (Rh) / Transducin (Gt) complex from Rh-Gt mimic peptides using NMR and molecular modeling techniques (conformational search, distance geometry and dynamics).
- Developed force field parameters of nitroxide molecules for use in the conformational search/molecular dynamic simulations.
- Solid-phase peptide synthesis of isotopically labeled and mutated Gt mimic peptides.
- Developed genomic sequence search, comparison and analysis tools in Tk/Tcl.
- Developed Computer-Aided NMR(NOE) Analysis Program (CANAP) to quickly derive protein structures.
- Conformational (systematic) search and dynamic simulations with solvation models on reverse β -turn mimic (conformational constrained) peptides.
- Computer aided Designed bio-active molecules or peptides (QSAR, CoMFA, systematic search, Validate, De Novo drug design and combinatorial approach).

Software Development and Testing Consultant:
(Tripos Inc., St. Louis, MO)

Oct. 1995-Dec.1996

- Part-time employee - responsible for all Sybyl/Alchemy 2000 modules testing and development.
- Trained new employees in the QA and testing department.

Postdoctoral Fellow:
(Department of Chemistry, Northwestern University)

Aug. 1992-Sept.1995

- Molecular modeling of protein structures of metalloenzymes.
- Advanced EPR/ENDOR/ESEEM studies on active-site structures of metallo-enzymes
- CW and Pulsed ENDOR studies on Fluoromet-hemoproteins to probe the hydrogen bonding network within the distal heme pocket that affect ligand binding properties.
- Developed general EPR/ENDOR spectral simulation programs for analyzing hyperfine and quadrupole tensors obtained from ENDOR results to ascertain structural and electronic properties of the active sites of metalloproteins.
- Developed instrumental interfaces of high frequency (35 GHz and 94 GHz) pulsed EPR/ENDOR spectrometers and software to control electronics and PC interfaces.
- Designed lab PC networking and servers and maintained the EPR web server for the Department of Chemistry.
- A volunteer of networking consultant in Networking Technical Group (NTG) and responsible for software and hardware supports and trouble shooting networking problems.

Graduate Research Assistant:
(Department of Chemistry, Temple University)

Jun 1988-July 1992

- Computational analyses of pigment /polymer interactions and macromolecules structures.
- Molecular modeling of charge-transfer dopants/polymer structures.
- IBM collaborated research program (IBM Palo Alto Scientific Research Center) on structural and electronic properties of doped polymeric materials.
- Developed AMEHKGN, an interface program for chemical computation and graphical display on VAX and RISC/6000 workstations.
- Modified and ported chemical computation programs (AMPAC, EHMACC and EPR spectral simulation) to different operating systems.
- Designed EPR spectrometer/PC interface and managed departmental MAC/PC lab, VAX clusters, IBM RISC/6000 and SGI workstations as well as networking and printers.
- Designed and characterized smart packaging materials and photoconducting polymer films using ESR, HPLC and other spectroscopic techniques.

TEACHING EXPERIENCE:

- | | |
|--|------------------|
| • Training instructor for "NINDS Neuroscience Nurse Training Program" | NINDS/NIH |
| • Training instructor for "NINDS Clinical Investigator Training Program" | NINDS/NIH |
| • Training instructor for "NINDS Bioinformatics and Statistics Training Program" | NINDS/NIH |
| • Class instructor in "Biol 5461: Molecular Recognitions" | Washington Univ. |
| • Course instructor in "Chem 216: Advanced Instrumental Analysis" | Temple Univ. |
| • Course instructor in "Chem 214: Advanced Analytical Chemistry" | Temple Univ. |

SCIENTIFIC PUBLICATIONS:

1. Lin, C.H., Fann, Y.C. Liou, D.M. "An exploratory study using an openEHR two level modeling approach to represent common data elements", *J. Am. Med. Info. Assoc.* v0. Pp1-12, 2016.
2. Hung, JF, Rau, HH, Hsu, CY, Chen, SC, Tsai, DJ, Fann, YC, Joshua Park, J., Eng, J. "Implementing Globally Unique Identifier Architecture in Date Collection for a Health Management Study in Taiwan Aboriginal Tribe", Book Chapter of Future Information Technology – II, p.121-130 2015

3. Barbara S. Mallona, Rebecca S. Hamiltona, Olga A. Kozhichb, Kory R. Johnson, Yang C. Fann, Mahendra S. Raod, Pamela G. Robeya, "Comparison of the molecular profiles of human embryonic and induced pluripotent stem cells of isogenic origin", *Stem Cell Research*, v.12, 376-386, 2014
4. Mallon, B.S., Chenoweth, J.G., Johnson, K.R., Hamilton, R.S., Tesar, P.J., Yavatkar, A.S., Tyson, L.J., Park, K., Chen, K.G., Fann, Y.C., McKay, R.D.G; "StemCellDB: The Human Pluripotent Stem Cell Database at the National Institutes of Health", *Stem Cell Research*, v.10, 57-66, 2013.
5. Hao, H., Kim, D.S., Johnson, K., Zang, C., Cui, K., Gregorski, J., Rajasimha, H., Fann, Y., Zhao, K., Swaroop, A., "Transcriptional Control of Homeostasis in Mammalian Rod Photoreceptors", *PLoS Genet.* 2012 Apr;8(4):e1002649. Epub 2012
6. Friedman JS, Ray JW, Waseem N, Johnson K, Brooks MJ, Hugosson T, Breuer D, Branham KE, Krauth DS, Bowne SJ, Sullivan LS, Ponjavic V, Gränse L, Khanna R, Trager EH, Gieser LM, Hughbanks-Wheaton D, Cojocaru RI, Ghiasvand NM, Chakarova CF, Abrahamson M, Göring HH, Webster AR, Birch DG, Abecasis GR, Fann Y, Bhattacharya SS, Daiger SP, Heckenlively JR, Andréasson S, Swaroop A. "Mutations in a *BTB-Kelch* protein, *KLHL7*, cause autosomal-dominant retinitis pigmentosa" *Am J Hum Genet.* 2009 Jun;84(6):792-800
7. Brody, T; Yavatkar, S.A., Lin, Y., Ross, J., Kuzin, A., Kundu, M., Fann, Y. and Odenwald, W.F. "Horizontal gene transfers link a human MRSA pathogen to contagious bovine mastitis bacteria", *PoLS ONE*, 3(8): e3074, 2008.
8. Yavatkar, A., Lin, Y., Ross, J., Fann, Y., Brody, T. and Odenwald, W.F.; "Rapid detection and curation of conserved DNA via enhanced-BLAT and EvoPrinterHD analysis"; *BMC Genomics*, 9:106, 2008
9. Cheung H, Wang SA, Fann Y, Upender B, Chinatala S, Frazin A, Nie W, Johnson CA. "A web-based, meta-data drive, clinical research platform for managing multiple clinical research studies". *AMIA Annual Symp. Proc.* Oct 11:906, 2007.
10. Cammack, R., Fann, Y., Lancashire, R.J., Maher, J.P., McIntyre, P.S., and Morse, R., "JCAMP-DX for electron magnetic resonance (EMR)" *Pure and Applied Chemistry*, 78(03), 613-631, 2006
11. Wang, A., Fann, Y.C., Cheung, H., Pecjak, F., Upender, B., Frazin, A., Lingam, R., Chintala, S., Wang, G., Kellogg, M., Martino, R.L., and Johnson, C.A. "Performance of Using Oracle XMLDB in the Evaluation of CDISC ODM for a Clinical Study Informatics System" *17th IEEE Symposium on Computer-Based Medical Systems (CBMS 2004)*, p. 594-9, 2004
12. Cheung, H., Fann, Y.C., Wang, A., Upender, B., Frazin, A., Lingam, R., Chintala, S., Pecjak, F., Wang, G., Kellogg, M., Martino, R.L., Johnson, C.A. "Web-Based Protocol Tracking Management System For Clinical Research" *17th IEEE Symposium on Computer-Based Medical Systems (CBMS 2004)*, p. 72-77, 2004
13. Jaszewski, A.R., Fann, Y.C., Chen, Y.R., Sato, K., Corbett, J., Mason, R.P. "EPR spectroscopy studies on the structural transition of nitrosyl hemoglobin in the arterial-venous cycle of DEANO-treated rats as it relates to the proposed nitrosyl hemoglobin/nitrosothiol hemoglobin exchange", *Free Rad. Biol. Med.* 2003, 35(4), 444-451.
14. Sato, K., Kadiiska, M.B., Ghio, A.J., Corbett, J. Fann, Y.C., Holland, S.M., Thurman, R.G. and Mason, R.P. "In vivo lipid-derived free radical formation by NADPH oxidase in acute lung injury induced by lipopolysaccharide: a model for ARDS", *FASEB J.* 2002, 16(13):1713-20
15. Guo, Q., Corbett, J., Fann, Y.C., Qian, S.Y., and Mason, R.P. "Electron Spin Resonance Investigation of Semiquinone Radicals Formed from the Reaction of Ubiquinone O with Human Oxyhemoglobin", *J. of Biological Chemistry*, 2002, 277(10), 6104-10.
16. Qian, S.Y., Chen, Y.R., Deterding, L.J., Fann, Y.C., Chignell, C.F., Tomer, K.B. and Mason, R.P. "Identification of Protein-derived Tyrosyl Radical in the Reaction of Cytochrome c and Horseradish Peroxidase: Characterization by ESR Spin-trapping, High Performance Liquid Chromatography and Mass Spectrometry", *Biochemical Journal*, 2002, 363(2), 281-288.
17. Rota, C., Fann, Y.C., Mason, R.P. "Phenoxy Free Radical Formation during the Oxidation of the Fluorescent Dye 2',7'-Dichlorofluorescein by Horseradish Peroxidase: Possible consequences for Oxidative Stress Measurements" *J. Biol. Chem.*, 1999, 274, 28161-28168.
18. Fann, Y.C., Metosh-Dickey, C.A., Winston, G.W., Sygula, A., Kadiiska, M.B., and Mason, R.P. "Enzymatic and Non-enzymatic Reduction of the Carcinogens 4-Nitroquinoline N-oxide and 4-Hydroxylaminoquinoline N-oxide to Free Radicals" *Chemical Research in Toxicology*, 1999, 12, 450-458.
19. Marchesi, E., Rota, C., Fann Y.C., Chignell, C.F., and Mason, R.P. "Photoreduction of the Fluorescent Dye 2'-7'-dichlorofluorescein: A Spin Trapping and Direct ESR Study with Implications to Oxidative Stress Measurements" *Free Rad. Biol. Med.*, 1999, 26, 148-161.
20. Kisselev, O., Kao, J., Ponder, J.W., Fann, Y.C., Gautam and Marshall, G.R.: Light-activated Rhodopsin Induces Structural Binding Motif in G-protein Alpha Subunit", *Proc. Natl. Acad. Sci. USA*, 1998, 95, 4270-4275.
21. Gunther, M.R., Tschirret-Guth, R.A., Witkowska, H.E., Fann, Y.C., Barr, D.P., Ortiz de Montellano, P.R. and Mason, R.P. "Site-specific Spin Trapping of Tyrosine Radicals in the Oxidation of Metmyoglobin by Hydrogen Peroxide", *Biochemical Journal*, 1998, 330, 1293-1299.
22. Lee, H.I., Dexter, A.F., Fann, Y.C., Lakner, F.J., Hager, L.P. and Hoffman, B.M., " Structure of the Modified Heme in Allylbenzene-inactivated Chloroperoxidase Determined by Q-band CW and Pulsed Spectroscopy ", *J. Am. Chem. Soc.*, 1997, 119, 4059-4069.

23. Telser, J., Fann, Y.C., Renner, M.W., Fajer, J., Wang, S., Zhang H., Scott, S.A., Hoffman, B.M., " Investigation by EPR and ENDOR Spectroscopy of the Ni(I) Form of Cofactor F430 of *Methanobacterium thermoautotrophicum* and of Ni(I) Octaethylisobacteriochlorin", *J. Am. Chem. Soc.*, 1997, 119, 733.
24. Musser, S.M., Fann, Y.C., Guriel, R.J., Chan, S.I., and Hoffman, B.M., " Q-band ENDOR and X band EPR Study of the SB-12 Heat-treated Cytochrome c Oxidase Complex", *J. Biol. Chem.*, 1997, 272, 203.
25. Fann, Y.C., Ahmed, I., Blackburn, N., Boswell, J., Hoffman, B.M., Wikstrom, M. " Structure of CuB in the binuclear heme-copper center of the cytochrome aa3-type quinol oxidase from *Bacillus subtilis*: An ENDOR and EXFAS Study", *Biochemistry*, 1995, 34, 10245.
26. Fann, Y.C., Ong, J.L., Nocek, J.M. and Hoffman, B.M. "¹⁹F and ^{1,2}H ENDOR Study of Distal Pocket N(ε)-H---F Hydrogen Bonding in Fluorometmyoglobin", *J. Am. Chem. Soc.* 1995, 117, 6109.
27. Wang, S.H., Chen, F., Fann, Y.C., Kashani, M., Malaty, M., Jansen, S.A. "Assessment of the Stability of Heterohedral Fullerenes: A Theoretical Analysis of C₆₀xN_x and C₆₀xB_x where x=1 and 2", *J. Phys. Chem.*, 1995, 99, 6801.
28. Fann, Y.C., Gerber, N., Osmulski, P.A., Hager, L.P., Sligar, S.G. and Hoffman, B.M. "ENDOR Determination of Heme Ligation in Chloroperoxidase and Comparison with Cytochrome P450-cam", *J. Am. Chem. Soc.*, 1994, 116, 5989.
29. Gurbiel, R.J., Fann, Y.C., Surerus, K.K., Werst, M.M., Musser, S.M., Chan, S.I., Fee, J.A. and Hoffman, B.M. "Detection of Two Histidyl Ligands to CuA of Cytochrome oxidase by 35 GHz ENDOR: ^{14,15}N and ^{63,65}Cu ENDOR Studies of the CuA Site in Bovine Heart Cytochrome aa3 and Cytochrome caa3 and ba3 from *Thermus thermophilus*", *J. Am. Chem. Soc.*, 1993, 115, 10888.
30. Fann, Y.C., Singh, D. and Jansen, S.A. "From Buckyballs to Bunnyballs: A Theoretical Analysis of Adduct Induced Electronic Effects", *J. Phys. Chem.*, 1992, 96, 5817.
31. Singh, D., Fann, Y.C. and Jansen, S.A. "Interesting Electronic Properties Generated by Metal-ion linked C₆₀ Chains", *Materials Research Society (MRS) Symposium Proceedings*, 1992, 247, 385.
32. Fann, Y.C., Singh, D. and Jansen, S.A. "Electronic Effects of Adducts on C₆₀: A Molecular Orbital Analysis", *MRS Symposium Proceedings*, 1992, 247, 379.
33. Fann, Y.C. and Jansen, S.A. "Evidence for Matrix Interaction in Doped Polymer Films: An EPR Analysis of o-tolidine/TCNQ in Bisphenol-A-Polycarbonate", *J. Phys. Chem.*, 1991, 95, 7484.
34. Fann, Y.C., Jansen, S.A. and Hutchins, M. "Crystallization and Matrix Effects on the Electronic Properties of Polymers Doped with CT salts of TCNQ", *MRS Symposium Proceedings*, 1990, 124, 107.
35. Fann, Y.C. and Jansen, S.A. "EPR Study of Donor-Acceptor Salts in Polymer Media", *MRS Symposium Proceedings*, 1989, 173, 161.
36. Fann, Y.C., Hao, H.S. and Kapoor, R.C. "Voltammetric Behaviour of Bis(biphenyl) Chromium(I) in Dimethylformamide at a Glassy Carbon Electrode", *B. Electrochem.*, 1989, 5, 382.
37. Fann, Y.C., Hao, H.S. and Kapoor, R.C. "Voltammetric Study of Ferrocene/ Ferricinium Ion Redox Reactions in Acetonitrile", *J. Chin. Chem. Soc.*, 1989, 36, 21.