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Thomas David Tullius

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EDUCATION

1973–1979	Stanford University, Department of Chemistry Ph.D. in Chemistry **Dissertation Title:** Structures of Metal Complexes in Biological Systems: EXAFS Studies of Blue Copper Proteins, Xanthine Oxidase and Vanadocytes **Research Advisor:** Professor Keith O. Hodgson
1969–1973	University of California at Los Angeles Bachelor of Science in Chemistry (*cum laude*) Undergraduate research with Professor C. S. Garner

PROFESSIONAL POSITIONS

Current positions	Professor of Chemistry, Professor of Pharmacology and Experimental Therapeutics, and Director, Program in Bioinformatics, Boston University
January-May 2019	Sabbatical leave with Professor Carlos Bustamante, Howard Hughes Medical Institute and the Department of Chemistry, University of California, Berkeley
January 2012	Distinguished visiting professor, Department of Chemistry and Institute for Integrated Cell-Material Sciences (ICEMS), Kyoto University, Japan
March to June 2006	Sabbatical leave in the laboratory of Dr. Ferran Azorin, Institut de Biologia Molecular de Barcelona, Spain
July 2001 to present	Professor of Pharmacology and Professor of Experimental Therapeutics, School of Medicine, Boston University
July 1997 to August 2005	Professor and Chairman, Department of Chemistry, Boston University
July 1991 to June 1997	Professor of Chemistry, Biophysics, and Biology and the McCollum-Pratt Institute, The Johns Hopkins University
August 1994 to July 1995	Sabbatical leave in the laboratory of Professor Robert Kaptein, Bijvoet Center for NMR Spectroscopy, University of Utrecht, The Netherlands
July 1988 to June 1991	Associate Professor of Chemistry, Biophysics, and Biology and the McCollum-Pratt Institute, The Johns Hopkins University
March 1985 to June 1988	Assistant Professor of Chemistry and Biology and the McCollum-Pratt Institute, The Johns Hopkins University

July 1982 to February 1985	Assistant Professor of Chemistry, The Johns Hopkins University
May 1979 to July 1982	NIH Postdoctoral Fellow with Professor Stephen J. Lippard, Department of Chemistry, Columbia University

HONORS AND AWARDS

Ellison Medical Foundation Senior Scholar Award in Aging, 2009–2013
Herbert A. Sober Award, American Society for Biochemistry and Molecular Biology, 1998
Fellow of the American Association for the Advancement of Science, elected 1996
Camille and Henry Dreyfus Teacher-Scholar, 1988–1993
Fellow of the Alfred P. Sloan Foundation, 1988–1992
Research Career Development Award, National Institutes of Health, 1987–1992
Searle Scholar, 1984–1987
National Research Service Award, National Cancer Institute, 1979–1981

SERVICE

Current:

Director, Bioinformatics graduate training program, and Principal Investigator, NIH T32 Program in Bioinformatics and Computational Biology, Boston University, 2011–present
Member, Steering Committee, Boston University SB2 training grant, 2020-present
Member, Advisory Board, Interdisciplinary Biomedical Research Office, Boston University, 2016-present
Member BU's BEST Internal Advisory Board, Boston University, 2015-present
Member, International Advisory Board, Institute for Chemical Research, Kyoto University, 2019-present
Member, Editorial Board, PeerJ, 2017-present
Member, Editorial Board, ScienceOpen, 2013-present
Member, Editorial Board, F1000 Research, 2012-present
Member, Faculty of 1000, 2002–present

Completed, Boston Univerity:

Co-Chair, General Education Committee, Boston University, 2017-2020
Member, Search Advisory Committee, Assistant Provost for General Education, 2019
Member, Special Committee on the Basic Life Sciences at Boston University, 2016-2017
Member, Task Force on General Education, Boston University, 2014-2016
Member, Employee Benefits Task Force, Boston University, 2013-2014
Member, University Research Leadership Council, Boston University, 2012-2013
Interim Director, Bioinformatics graduate training program, Boston University, 2009–2010
Acting Director, Bioinformatics graduate training program, Boston University, 2001
Member, executive committee, Bioinformatics graduate training program, Boston University, 1998–2008

Completed, external:

Member, Advisory Committee, Center for Synchrotron Biosciences, NSLS Brookhaven/Albert Einstein College of Medicine/Case Western Reserve University, 1998–2012
Member, Advisory Committee, Science Advancement Programs, Research Corporation, 2001–2008
Member, Board of Trustees, The Sage School, Foxboro MA, 2002–2007
Member, External Review Committee, Department of Chemistry, Bryn Mawr College, October 2006
Member, External Review Committee, Biochemistry program, Bates College, March 2004
Member, External Review Committee, Department of Chemistry, Utah State University, September 2003
Member, Editorial Advisory Board, *Chemistry Central Journal*, 2006–2011
Member, Editorial Board, *Journal of Biological Inorganic Chemistry*, 1999–2002, 2004-2006
Chair, *JBIC* Publications Committee, Society of Biological Inorganic Chemistry, 2000–2003
Editor, *Journal of Biological Inorganic Chemistry*, 1995–1999
Member, Molecular Biophysics CAREER Panel, National Science Foundation, 2017
Member, ENCODE Mapping grant review panel, NIH/NHGRI, 2016
Member, BD2K Predoctoral Training in Biomedical Big Data grant review panel, NIH, 2016
Ad-hoc member, SBCA Study Section, NIH, 2014
Member, Mechanisms of Inheritance Review Panel, National Science Foundation, 2013
Member, Chemistry of Life Processes Review Panel, National Science Foundation, 2009
Ad-hoc member, Biomedical Research and Research Training Committee, NIGMS, NIH, 2007, 2008
Member, Biomedical Research and Research Training Subcommittee A, NIGMS, NIH, 1999-2003
Member, Special Study Section for Chemistry/Biology Interface Training Grants, NIGMS, NIH, 1993
Member, Special Study Section for Biotechnology Training Grants, NIGMS, NIH, 1989–1990
Member, Molecular Biochemistry Review Panel, National Science Foundation, 1994–2001
Ad-hoc member, Bioorganic and Natural Products Study Section, NIH, 1992, 1994
Ad-hoc member, Metallobiochemistry Study Section, NIH, 1991
Program Chair, Molecular Biophysics Subgroup, Biophysical Society, 1999
Chair, Nominations Committee, Division of Biological Chemistry of the American Chemical Society, 1997–1998
Co-Director, Institute for Biophysical Research on Macromolecular Assemblies, The Johns Hopkins University, 1990–1997
Member, Academic Council of the Homewood Schools, The Johns Hopkins University, 1992–1993, 1996–1997
Co-organizer, UCLA Colloquium on "The Inorganic Chemistry-Molecular Biology Interface". Taos, New Mexico, 1990
Member, Governor's Council on Toxic Substances, State of Maryland, 1988–1991

Rear Commodore, Quissett Yacht Club, Quissett MA, 2018-2020
Member, Board of Directors, Quissett Yacht Club, Quissett MA, 2006-2009
Member, Board of Directors, Southern Massachusetts Sailing Association, 2007-2009

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Chemical Society
American Association for the Advancement of Science
International Society for Computational Biology
Biophysical Society
RNA Society
American Society for Biochemistry and Molecular Biology (ASBMB)

PUBLICATIONS

101 total
h index 46 (Google Scholar)

1 R. N. Azad, D. Zafiropoulos, D. Ober, Y. Jiang, T-P. Chiu, J. Sagendorf, R. Rohs & T. D. Tullius. 2018. Experimental maps of DNA structure at nucleotide resolution distinguish intrinsic from protein-induced DNA deformations. *Nucleic Acids Res.* **46**, 2636-2647.

2 R.N. Azad, S. Ingle & T. D. Tullius. 2015. Deuterated nucleotides as chemical probes of RNA structure. A detailed protocol for the enzymatic synthesis of a complete set of nucleotides specifically deuterated at ribose carbons. *ScienceOpen Research*. DOI: 10.14293/S2199-1006.1.SOR-LIFE.ALCJCN.v1

3 T-P. Chiu, L. Yang, T. Zhou, B. Main, S. C. J. Parker, C. J. Stephen, S. Nuzhdin, T. D. Tullius & R. Rohs. 2015. GBshape: a genome browser database for DNA shape annotations. *Nucleic Acids Res.* **43**, D103-D109.

4 S. Ingle, R. N. Azad, S. S. Jain & T. D. Tullius. 2014. Chemical probing of RNA with the hydroxyl radical at single-atom resolution. *Nucleic Acids Res.* **42**, 12758-12767.

5 J. W. K. Ho et al. (authors include T. D. Tullius). 2014. Comparative analysis of metazoan chromatin organization. *Nature* **512**, 449-452.

6 E. P. Bishop, R. Rohs, S. C. J. Parker, S. M. West, P. Liu, R. S. Mann, B. Honig & T. D. Tullius. 2011. A map of minor groove shape and electrostatic potential from hydroxyl radical cleavage patterns of DNA. *ACS Chemical Biology* **6**, 1314-1320. PMC3241897

7 T. D. Tullius, S. C. J. Parker & E. H. Margulies. 2011. Evolutionary constraint on DNA shape in the human genome. In *Evolutionary Biology: Concepts, Biodiversity, Macroevolution and Genome Evolution,* P. Pontarotti, ed. (Springer-Verlag Berlin Heidelberg), pp 243-256.

8 S. C. J. Parker, A. Harlap & T. D. Tullius. 2011. A computational method to search for DNA structural motifs in functional genomic elements. In J. I. Castrillo & S. G. Oliver, Eds., *Yeast Systems Biology*. Methods in Molecular Biology (MiMB) series, Vol. 759. (Series Ed: John M. Walker. ISSN: 1064-3745). Humana Press, Springer, New York. pp 367-379.

9 S. C. J. Parker & T. D. Tullius. 2011. DNA shape, genetic codes, and evolution. *Curr. Opin. Struct. Biol.* **21**, 342-347. PMC3112471

10 The ENCODE Project Consortium (authors include T. D. Tullius). 2011. A user's guide to the Encyclopedia of DNA elements (ENCODE). *PLoS Biology* **9,** e1001046. doi:10.1371/journal.pbio.1001046. PMC3079585

11 T. D. Tullius. 2009. DNA binding shapes up. *Nature* **461**, 1225-1226.

12 S. C. J. Parker, L. Hansen, H. O. Abaan, T. D. Tullius & E. H. Margulies. 2009. Local DNA topography correlates with functional noncoding regions of the human genome. *Science* **324**, 389-392. PMC2749491

13 S. C. J. Parker, E. H. Margulies & T. D. Tullius. 2008. The relationship between fine scale DNA structure, GC content, and functional elements in 1% of the human genome. *Genome Informatics* **20**, 199-211.

14 S. S. Jain & T. D. Tullius. 2008. Footprinting protein-DNA complexes using the hydroxyl radical. *Nature Protocols* **3**, 1092-1100.

15 Q. Wang, T. D. Tullius & J. R. Levin. 2007. Effects of discontinuities in the DNA template on abortive initiation and promoter escape by *Escherichia coli* RNA polymerase. *J. Biol. Chem.* **282**, 26917-26927.

16 The ENCODE Consortium (authors include T. D. Tullius, J. A. Greenbaum and S. C. J. Parker). 2007. Identification and analysis of functional elements in 1% of the human genome by the ENCODE pilot project. *Nature* **447**, 799-816. PMC2212820

17 J. A. Greenbaum, B. Pang & T. D. Tullius. 2007. Construction of a genome-scale structural map at single-nucleotide resolution. *Genome Research* **17**, 947-953. PMC1891353

18 J. A. Greenbaum, S. C. J. Parker & T. D. Tullius. 2007. Detection of DNA structural motifs in functional genomic elements. *Genome Research* **17**, 940-946. PMC1891352

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20 T. D. Tullius & J. A. Greenbaum. 2005. Mapping nucleic acid structure by hydroxyl radical cleavage. *Curr. Opinion Chem. Biol.* **9**, 127-134.

21 H. Guo & T. D. Tullius. 2003. Gapped DNA is anisotropically bent. *Proc. Natl. Acad. Sci USA* **100**, 3743-3747. PMC152992

22 R. W. Frazee, J. A. Taylor & T. D. Tullius. 2002. Interchange of DNA binding modes in the deformed and ultrabithorax homeodomains: a structural role for the N-terminal arm. *J. Mol. Biol.* **323**, 665-683.

23 B. Chen, E. R. Jamieson & T. D. Tullius. 2002. A general synthesis of specifically deuterated nucleotides for studies of DNA and RNA. *Bioorg. Med. Chem. Lett.* **12**, 3093-3096.

24 T. D. Tullius. Probing DNA structure with hydroxyl radicals. 2001. In *Current Protocols in Nucleic Acid Chemistry*, S. L. Beaucage, D. E. Bergstrom, G. D. Glick, & R. A. Jones, eds. (Wiley), pp. 6.7.1-6.7.8.

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26 L. M. Ottinger & T. D. Tullius. High resolution *in vivo* footprinting of a protein-DNA complex using gamma radiation. 2000. *J. Amer. Chem. Soc.* **122**, 5901-5902.

27 J. R. Levin, J. J. Blake, R. A. Ganunis & T. D. Tullius. 2000. The roles of specific template nucleotides in the formation of stable transcription complexes by *Escherichia coli* RNA polymerase. *J. Biol. Chem.* **275**, 6885-6893.

28 T. D. Tullius. 2000. Structural chemistry of DNA cleavage by the hydroxyl radical. *Radiation Research, Volume 2 (Conference Proceedings)*, pp. 333-335.

29 H. R. Widlund, P. N. Kuduvalli, M. Bengtsson, H. Cao, T. D. Tullius & M. Kubista. 1999. Nucleosome structural features and intrinsic properties of the (TATAAACGCC)-repeat sequence. *J. Biol. Chem.* **274,** 31847-31852.

30 C. P. J. McDaniels, L. T. Jensen, C. Srinivasan, D. R. Winge & T. D. Tullius. 1999. The yeast transcription factor Mac1 binds to DNA in a modular fashion. *J. Biol. Chem.* **274**, 26962-26967.

31 B. Balasubramanian, W. K. Pogozelski & T. D. Tullius. 1998. DNA strand breaking by the hydroxyl radical is governed by the accessible surface areas of the hydrogen atoms of the DNA backbone. *Proc. Natl. Acad. Sci. USA* **95**, 9738–9743. PMC21406

32 W. K. Pogozelski & T. D. Tullius. 1998. Oxidative strand scission of nucleic acids: routes initiated by hydrogen abstraction from the sugar moiety. *Chem. Rev*. **98**, 1089-1107.

33 A. Draganescu & T. D. Tullius. 1998. The DNA binding specificity of engrailed homeodomain. *J. Mol. Biol.* **276**, 529-536.

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35 S. E. Shadle, D. F. Allen, H. Guo, W. K. Pogozelski, J. S. Bashkin and T. D. Tullius. 1997. Quantitative analysis of electrophoresis data: novel curve fitting methodology and its application to the determination of a protein-DNA binding constant. *Nucleic Acids Res.* **25**, 850–861. PMC146501

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37 W. J. Dixon, C. Inouye, M. Karin and T. D. Tullius. 1996. CUP2 binds in a bipartite manner to Upstream Activation Sequence c in the promoter of the yeast copper metallothionein gene. *J. Biol. Inorg. Chem.* **1**, 451–459.

38 T. D. Tullius. 1996. Footprinting of nucleic acids by iron-based reagents. In *Comprehensive Supramolecular Chemistry*. Volume 5 (Bioinorganic Systems). Series editor in chief, J- M. Lehn, volume editor, K. S. Suslick (Pergamon Press), pp. 317-343.

39 T. D. Tullius. 1996. Chemical mapping of nucleic acid conformation. In *Bioorganic Chemistry: Nucleic Acids*, S. M. Hecht, ed. (Oxford University Press), pp. 144-162.

40 J. A. Johnson, W. J. Dixon and T. D. Tullius. 1996. Affinity of CUP2, a copper-dependent transcription factor, for DNA sequences upstream of the yeast metallothionein gene. *Inorganica Chimica Acta* **242**, 233-238.

41 A. Draganescu and T. D. Tullius. 1996. Targeting of nucleic acids by iron complexes. In *Metal Ions and Biological Systems*, Volume 33, H. Sigel and A. Sigel, eds. (Marcel Dekker, New York), pp. 453-484.

42 T. D. Tullius. 1995. Homeodomains: together again for the first time. *Structure* **3**, 1143-1145.

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44 A. S. Kimball, M. L. Kimball, M. Jayaram and T. D. Tullius. 1995. Chemical probe and missing nucleoside analysis of Flp recombinase bound to the recognition target sequence. *Nucleic Acids Res.* **23**, 3009–3017. PMC307143

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46 W. K. Pogozelski, T. J. McNeese and T. D. Tullius. 1995. What species is responsible for strand scission in the reaction of $[Fe(EDTA)]^{2-}$ and H_2O_2 with DNA? *J. Am. Chem. Soc*. **117**, 6428–6433.

47 A. Draganescu, J. R. Levin and T. D. Tullius. 1995. Homeodomain proteins: what governs their ability to recognize specific DNA sequences? *J. Mol. Biol.* **250**, 595-608.

48 P. N. Kuduvalli, C. A. Townsend and T. D. Tullius. 1995. Cleavage by calicheamicin γ_1^I of DNA in a nucleosome formed on the 5S RNA gene of *Xenopus borealis*. *Biochemistry* (Accelerated Publication) **34**, 3899-3906.

49 S. C. Mah, M. A. Price, C. A. Townsend and T. D. Tullius. 1994. Features of DNA recognition for oriented binding and cleavage by calicheamicin. *Tetrahedron* **50**, 1361-1378.

50 S. C. Mah, C. A. Townsend and T. D. Tullius. 1994. Hydroxyl radical footprinting of calicheamicin. Relationship of binding to cleavage. *Biochemistry* **33**, 614-621.

51 J. S. Bashkin and T. D. Tullius. 1993. Hydroxyl radical footprinting. In *Footprinting of Nucleic Acid-Protein Complexes*, A. Revzin, ed. (Academic Press, San Diego) p. 75-106.

52 J. J. Hayes and T. D. Tullius. 1993. Structure of the TFIIIA-DNA complex. In *Nucleic Acids & Molecular Biology*, Volume 7, F. Eckstein and D. M. J. Lilley, eds. (Springer-Verlag, Berlin Heidelberg), p. 106-119.

53 A. S. Kimball, J. Lee, M. Jayaram and T. D. Tullius. 1993. Sequence-specific cleavage of DNA *via* nucleophilic attack of hydrogen peroxide, assisted by Flp recombinase. *Biochemistry* (Accelerated Publication) **32**, 4698-4701.

54 J. Bashkin, J. J. Hayes, T. D. Tullius and A. P. Wolffe. 1993. Structure of DNA in a nucleosome core particle at high salt concentration and at high temperature. *Biochemistry* (Accelerated Publication) **32**, 1895-1898.

55 M. A. Price and T. D. Tullius. 1993. How the structure of an adenine tract depends on sequence context. A new model for the structure of T_nA_n DNA sequences. *Biochemistry* **32**, 127-136.

56 J. J. Hayes and T. D. Tullius. 1992. Structure of the TFIIIA-5S DNA complex. *J. Mol. Biol.* **227**, 407-417.

57 M. A. Price and T. D. Tullius. 1992. Using hydroxyl radical to probe DNA structure. *Methods Enzymol., Vol. 212*, D. M. J. Lilley and J. Dahlberg, eds., pp. 194-219.

58 J. R. Levin, A. M. Burkhoff and T. D. Tullius. 1991. Using the chemistry of the hydroxyl radical to determine structural details about DNA and protein-DNA complexes. In *A Laboratory Guide to In Vitro Studies of Protein/DNA Interactions*. BioMethods Series, Volume 5, H. P. Saluz and J.-P. Jost, eds. (Birkhäuser Verlag), pp. 134-144.

59 W. J. Dixon, J. J. Hayes, J. R. Levin, M. F. Weidner, B. A. Dombroski and T. D. Tullius. 1991. Hydroxyl radical footprinting. *Methods Enzymol., Vol. 208 (Protein-DNA Interactions)*, R. T. Sauer, ed., p. 380-413.

60 J. J. Hayes, J. Bashkin, T. D. Tullius and A. P. Wolffe. 1991. The histone core exerts a dominant constraint on the structure of DNA in a nucleosome. *Biochemistry* **30**, 8434-8440.

61 T. D. Tullius. 1991. DNA footprinting with the hydroxyl radical. *Free Radical Res. Comm.* **12–13**, 521-529.

62 T. D. Tullius. 1991. The use of chemical probes to analyse DNA and RNA structures. *Curr. Opinion Struct. Biol.* **1**, 428-434.

63 K. H. Nakagawa, C. Inouye, B. Hedman, M. Karin, T. D. Tullius and K. O. Hodgson. 1991. Evidence from EXAFS for a copper cluster in the metalloregulatory protein CUP2 from yeast. *J. Amer. Chem. Soc.* **113**, 3621-3623.

64 T. D. Tullius. 1991. Viewpoint: bioinorganic chemistry. *J. Cell. Biochem.* **45**, 5-6.

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66 J. J. Hayes, T. D. Tullius and A. P. Wolffe. 1990. The structure of DNA in a nucleosome. *Proc. Natl. Acad. Sci. USA* **87**, 7405-7409. PMC54755

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79 T. D. Tullius. 1989. Physical studies of protein-DNA complexes by footprinting. *Annu. Rev. Biophys. Biophys. Chem.* **18**, 213–237.

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88 A. M. Burkhoff and T. D. Tullius. 1987. The unusual conformation adopted by the adenine tracts in kinetoplast DNA. *Cell* **48**, 935-943.

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96 T. D. Tullius, W. O. Gillum, R. M. K. Carlson and K. O. Hodgson. 1980. Structural study of the vanadium complex in living ascidian blood cells by X-ray absorption spectroscopy. *J. Am. Chem. Soc.* **102**, 5670-5676.

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98 T. D. Tullius, D. M. Kurtz, S. D. Conradson and K. O. Hodgson. 1979. The molybdenum site of xanthine oxidase. Structural evidence from X-ray absorption spectroscopy. *J. Am. Chem. Soc.* **101**, 2776-2779.

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100 J. P. Collman, R. K. Rothrock, J. P. Sen, T. D. Tullius and K. O. Hodgson. 1976. Molecular structure of *trans*-bis(benzeneselenido)[difluoro-3,3'-trimethyldinitrilo)bis(2-pentanoneoximato)borate]rhodium(III). *Inorg. Chem.* **15**, 2947-2948.

101 W. D. Stanley, T. Davies, T. D. Tullius and C. S. Garner. 1973. Kinetics of spontaneous thermal reduction of *cis*-tetraaquodiamminecobalt(III), *cis*-diaquobis(trimethylenediamine)cobalt(III) and 1,2,3-triaquo-N-(2-aminoethyl)-1,3-diaminopropanecobalt(III) cations in hot aqueous perchloric acid. *J. Inorg. Nucl. Chem.* **35**, 3857-3864.

INVITED LECTURES

CMO-BIRS meeting: Rules of Protein-DNA Recognition: Computational and Experimental Advances. Oaxaca, Mexico June 3-8, 2018

Southeast Regional Meeting of the American Chemical Society, Columbia SC. Symposium on "Cutting Edge of Biological Inorganic Chemistry" October 25, 2016

Department of Chemistry and Biochemistry, University of Arizona April 14, 2016

Pacifichem 2015, Honolulu HI December 2015

Genome Center of Wisconsin, University of Wisconsin October 29, 2015

CMO-BIRS meeting: Rules of Protein-DNA Recognition: Computational and Experimental Advances. Oaxaca, Mexico June 21, 2015

13th International Workshop on Radiation Damage to DNA. MIT, Cambridge MA June 18, 2014

Department of Molecular Biosciences, Northwestern University October 31, 2013

Ellison Medical Foundation Colloquium on the Biology of Aging, Marine Biological Laboratory, Woods Hole MA August 7, 2013

Department of Chemistry, Bard College, Annandale NY April 2, 2013

Department of Molecular and Computational Biology, University of Southern California May 17, 2012

Department of Chemistry, University of Southern California May 16, 2012

Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Kyoto Japan January 12, 2012

Institute of Advanced Energy, Kyoto University, Kyoto Japan January 11, 2012

Department of Chemistry, Kyoto University, Kyoto Japan January 6, 2012

Department of Chemistry, Brown University October 21, 2011

Division of Intramural Research, National Human Genome Research Institute, NIH April 21, 2011

Pacifichem 2010, Honolulu HI December 2010

Department of Chemistry, University of North Carolina Chapel Hill October 27, 2010

Plenary lecture, Radiation Research Society Annual Meeting, Maui HI September 2010

14th Evolutionary Biology Meeting, Marseilles France September 22, 2010

American Chemical Society National Meeting, Boston MA. Symposium on "Recognition of duplex DNA: recent advances" August 2010

American Chemical Society National Meeting, Boston MA. Symposium on Bioinorganic Chemistry (Lippard 70th birthday) August 2010

Keynote lecture, MAGNet Center Retreat, Columbia University, New York NY April 30, 2010

Wadsworth Center, Albany NY April 29, 2010

ENCODE Consortium Meeting, Rockville MD March 10, 2010

Max Delbrück Center for Molecular Medicine, Berlin, Germany December 9, 2009
Department of Microbiology, Boston University School of Medicine September 28, 2009
16th Conversation in Biomolecular Stereodynamics, Albany NY June 16-20, 2009
Center for Computational Biology and Bioinformatics, Columbia University May 18, 2009
Department of Biochemistry, Tulane University April 21, 2008
Department of Chemistry, University of South Carolina April 18, 2008
Wolfe Laboratories, Watertown MA April 10, 2008
Hauptman-Woodward Institute, Buffalo NY February 21, 2008
Department of Biochemistry and Molecular Biophysics, Columbia University February 15, 2008
University of Texas-Southwestern, Dallas TX January 28, 2008
Joslin Diabetes Center, Boston MA October 25, 2007
Department of Chemistry, Bowdoin College September 14, 2007
American Chemical Society National Meeting, Boston MA August 20, 2007
Chemical Biology Training Grant Symposium, University of Minnesota May 28, 2007
Department of Molecular and Cell Biology, Boston University School of Dental Medicine October 19, 2006
ENCODE Consortium Meeting, Bethesda MD July 5-7, 2006
Center for Genome Regulation, Barcelona, Spain April 24, 2006
Institut de Biologia Molecular de Barcelona, Spain March 31, 2006
Pacifichem 2005, Honolulu December 15-20, 2005
Department of Chemistry, University of Florida November 14, 2005
Boston Regional Inorganic Chemistry Meeting, Harvard University June 23, 2005
14th Conversation in Biomolecular Stereodynamics, Albany NY June 14-18, 2005
Department of Biochemistry and Biophysics, University of Rochester May 4, 2005
Department of Chemistry, The Johns Hopkins University March 24, 2005
Gordon Research Conference on Metals in Biology January 23-27, 2005
ENCODE meeting, Cold Spring Harbor Laboratory, NY November 10, 2004
Department of Chemistry, Wellesley College July 7, 2004
Department of Chemistry, Princeton University May 3, 2004
Department of Chemistry, Northeastern University February 25, 2004
Department of Chemistry, Massachusetts Institute of Technology January 12, 2004
Department of Chemistry, Emory University April 30, 2003
Department of Chemistry, Georgia Institute of Technology April 29, 2003
Department of Chemistry, University of Illinois at Chicago April 30, 2002
Department of Chemistry, Indiana University March 29, 2002
Department of Chemistry, Boston College February 13, 2002

International Workshop on Radiation Damage to DNA. Orleans, France September 1-6, 2001
International Workshop on Biophysics and Bioinformatics. Berlin August 25, 2001
Department of Molecular Biology, Medical College of Georgia April 26, 2001
Department of Biochemistry, University of Massachusetts/Worcester April 11, 2001
Department of Chemistry, New York University March 9, 2001
Pacifichem 2000, Honolulu December 14-19, 2000
Inorganic Chemistry in the 21st Century: A Symposium in Honor of Professor Stephen J. Lippard. MIT October 6, 2000
MENDEL-BRNO 2000: Conference on DNA structure and interactions, their biological roles and implications in biomedicine and biotechnologies. Brno, Czech Republic July 19-23, 2000
Department of Chemistry, University of Texas at Arlington April 28, 2000
Department of Chemistry, Wesleyan University, Middletown CT April 6, 2000
National Institutes of Health, Bethesda MD November 9, 1999
International Conference on Radiation Research, Dublin, Ireland July 18-23, 1999
11th Conversation in Biomolecular Stereodynamics, Albany NY June 15-19, 1999
Department of Molecular Biology, Boston University School of Dental Medicine May 19, 1999
Department of Biochemistry, Tufts University April 13, 1999
Biophysical Society National Meeting, Baltimore MD February 13, 1999
Department of Chemistry, SUNY Geneseo December 4, 1998
Department of Biology, Georgia Institute of Technology November 20, 1998
Department of Pharmacology, Boston University November 18, 1998
Department of Chemistry, Boston College November 16, 1998
After the Genome, Jackson Hole WY October 10-14, 1998
American Chemical Society National Meeting, Boston MA August 23-28, 1998
Gordon Research Conference on Radiation Chemistry July 5-10, 1998
Herbert A. Sober Award Lecture, American Society of Biochemistry and Molecular Biology Annual Meeting, Washington DC May 19, 1998
Radiation Research Society April 26-29, 1998
Department of Chemistry, Dartmouth College March 12, 1998
Department of Chemistry, University of California, Davis January 27, 199
Department of Chemistry, Rutgers University November 18, 1997
Department of Biology, Northeastern University October 30, 1997
Gordon Research Conference on Free Radical Reactions July 13-18, 1997
International Workshop on Radiation Damage to DNA. Windermere UK April 20-24, 1997
Department of Biochemistry and Molecular Biophysics, Washington University February 19, 1997

Department of Biology, University of California, Santa Cruz January 24, 1997
American Chemical Society National Meeting, Orlando FL August 25-29, 1996
Department of Chemistry, Boston University July 18, 1996
Department of Biochemistry, University of Nevada, Reno May 7, 1996
Division of Toxicology, Massachusetts Institute of Technology April 10, 1996
Department of Chemistry, Bryn Mawr College February 23, 1996
International Chemical Congress of Pacific Basin Societies, Honolulu December 17-22, 1995
Department of Chemistry, California Institute of Technology November 19, 1995
Institute for Molecular Biology, Barcelona March 1995
Department of Chemistry, University of Basel February 1995
Max Planck Institute, Munich December 1994
International Symposium on Metals and Genetics, Toronto May 27, 1994
Symposium on Nucleic Acids, ACS Middle Atlantic Regional Meeting, Baltimore MD May 25, 1994
Biophysical Society National Meeting, New Orleans March 6-10, 1994
Laboratory of Molecular Embryology, National Institutes of Health February 4, 1994
International Conference on Biological Inorganic Chemistry, San Diego August 22-27, 1993
Inorganic Biochemistry Summer Workshop, University of Georgia August 9-10, 1993
Steenbock Symposium, University of Wisconsin May 23-26, 1993
New York Academy of Sciences May 13, 1993
Colloquium, Department of Biology, The Johns Hopkins University April 14, 1993
Department of Chemistry, Princeton University March 30, 1993
ACS Northeast Regional Meeting, Alexandria VA December 8, 1992
Department of Molecular Biology, The Scripps Research Institute November 12, 1992
Department of Chemistry, Boston College October 1, 1992
Keynote Lecture, Klausner Group Retreat, NIH/NCI, Airlie House, VA October 21, 1992
Inorganic Biochemistry Summer Workshop, University of Georgia August 10, 1992
Department of Chemistry, The Catholic University of America July 8, 1992
MRC Laboratory of Molecular Biology, Cambridge UK May 12, 1992
International Meeting on Nucleic Acid Structure, Munich, Germany May 2-7, 1992
Department of Chemistry, West Virginia University February 24, 1992
7th Conversation in Biomolecular Stereodynamics, Albany NY June 18-22, 1991
Gordon Research Conference on Nucleic Acids June 1991
Gordon Research Conference on Metals in Biology January 1991
DNA-Drug Targeting, Paris December 1990
Department of Chemistry, University of Minnesota May 17, 1990

Waksman Institute, Rutgers University March 13, 1990
International Chemical Congress of Pacific Basin Societies, Honolulu December 1989
Department of Chemistry, Georgia State University November 3, 1989
Department of Chemistry, Emory University November 2, 1989
Bell Telephone Laboratories October 23, 1989
Department of Chemistry, University of Maryland Baltimore County October 3, 1989
ACS Southeast Regional Meeting, Raleigh-Durham NC October 1989
Plenary Lecturer, Fifth Conference on Superoxide and Superoxide Dismutase, Jerusalem September 1989
International Conference on Biological Inorganic Chemistry, Boston July 1989
Department of Chemistry, Harvard University April 10, 1989
Plenary Lecturer, International Meeting on Recognition Studies in Nucleic Acids, Sheffield UK April 1989
Department of Chemistry, Bates College March 29, 1989
Department of Chemistry, University of California, Davis March 16, 1989
Department of Chemistry, University of Virginia February 24, 1989
Department of Chemistry, Syracuse University February 21, 1989
Department of Embryology, Carnegie Institute of Washington January 9, 1989
American Society of Biochemistry and Molecular Biology, San Francisco January 1989
Bethesda Research Laboratories December 20, 1988
ACS Southeast Regional Meeting, Atlanta GA November 1988
Department of Biology, University of Southern California October 18, 1988
Department of Chemistry, UCLA October 17, 1988
Department of Pharmacology, University of California, San Diego October 14, 1988
Department of Chemistry, Wesleyan University October 6, 1988
New England Biolabs September 28, 1988
EMBO Workshop on DNA Curvature and Bending, Cambridge UK September 1988
3rd Chemical Congress of the North American Continent, Toronto June 5-8, 1988
Laboratory of Molecular Biology, National Institutes of Health May 13, 1988
Department of Chemistry, Brown University April 19, 1988
Lawrence Berkeley Laboratory April 25, 1988
Department of Biology, University of Pittsburgh April 18, 1988
ICN-UCLA Conference on Metal Ion Homeostasis, Frisco CO April 1988
Department of Chemistry, University of Massachusetts March 28, 1988
Frederick Cancer Research Facility, NIH December 18, 1987
Department of Chemistry, Massachusetts Institute of Technology December 14, 1987
Department of Chemistry, University of South Carolina November 24, 1987
Department of Chemistry, University of Georgia November 23, 1987
Department of Chemistry, Emory University November 20, 1987

Department of Chemistry, North Carolina State University	November 19, 1987
Department of Chemistry, University of California, San Diego	November 13, 1987
Department of Chemistry, California Institute of Technology	November 12, 1987
Department of Chemistry, Stanford University	November 10, 1987
Department of Chemistry, University of California, Berkeley	November 9, 1987
Department of Chemistry, University of Oregon	November 6, 1987
Department of Chemistry, Princeton University	October 13, 1987
DuPont Central Research	October 9, 1987
Department of Chemistry, Columbia University	September 14, 1987
Department of Chemistry, Lehigh University	September 16, 1987
International Conference on Biological Inorganic Chemistry, Netherlands	July 1987
5th Conversation in Biomolecular Stereodynamics, Albany NY	June 1987
Department of Chemistry, University of Illinois at Chicago	May 15, 1987
Department of Chemistry, University of Delaware	April 15, 1987
Department of Chemistry, University of Michigan	March 2, 1987
Laboratory of Cellular and Developmental Biology, NIH	February 25, 1987
Department of Chemistry, New York University	February 13, 1987
Department of Biochemistry, University of Washington	January 22, 1987
Gordon Research Conference on Metals in Biology	January 1987
Department of Chemistry, University of Illinois	November 25, 1986
Department of Chemistry, Northwestern University	November 24, 1986
Department of Chemistry, UCLA	September 16, 1986
Department of Chemistry, University of California, Irvine	September 15, 1986
Laboratory of Mathematical Biology, NIH	August 12, 1986
Gordon Research Conference on Biopolymers	June 1986
American Society of Biological Chemistry	June 1986
DuPont Central Research	June 12, 1986
Department of Chemistry, Barnard College, NY	April 4, 1986
Department of Chemistry, University of Washington	January 24, 1986
Department of Chemistry, University of South Carolina	May 6, 1985
Inorganic Materials Symposium, 3M Company	April 10, 1985
Department of Chemistry, University of Maryland	March 26, 1985
Department of Chemistry, George Washington University	March 1, 1985
Department of Chemistry, Virginia Commonwealth University	February 5, 1985
Department of Chemistry, Catholic University of America	November 16, 1984
Department of Chemistry, Fordham University	October 10, 1984
Department of Chemistry, Swarthmore College	October 5, 1984

CURRENT FUNDING

MCB-1616388
National Science Foundation
Chemical probing of RNA tertiary structure in a whole transcriptome at single-atom resolution
7/1/16–6/30/20
$660,000

T32 GM 100842
National Institutes of Health
Predoctoral Training in Bioinformatics and Computational Biology
4/1/18 – 3/31/23
$1,152,650

FUNDING HISTORY

R01 GM 106056
PI: Remo Rohs, USC
National Institutes of Health/NIGMS
Genome analysis based on the integration of DNA sequence and shape
2/1/14–1/31/18
$1,231,173 ($196,440 Tullius lab)

U54 CA121852
National Institutes of Health/National Cancer Institute
National Centers: Multi-Scale Study of Cellular Networks (MAGNet)
PI: Andrea Califano and Barry Honig, Columbia University
9/1/10–6/30/13
$406,000 (Tullius lab)

AG-SS-2249-09
Ellison Medical Foundation Senior Scholar Award in Aging
Genome Damage and Aging: Whole-Genome Maps of Oxidative DNA Lesions at Single-Nucleotide Resolution
11/1/09–10/31/14
$975,000

MCB-0843265
National Science Foundation
Measurement of the Deuterium Kinetic Isotope Effect on Hydroxyl Radical Cleavage of RNA
7/1/09–9/30/13
$649,456

R01 HG 003541
National Institutes of Health/National Human Genome Research Institute
Structure of Genomic DNA at Single-Nucleotide Resolution
7/1/09–6/30/12
$900,000

R01 HG 003541
National Institutes of Health/National Human Genome Research Institute
Structure of Genomic DNA at Single-Nucleotide Resolution (ENCODE)
9/30/04–6/30/08
$870,677

R01 GM 41930
National Institutes of Health/National Institute of General Medical Sciences
Footprinting with Iron(II)-Generated Hydroxyl Radical
7/1/00 - 6/30/05
$1,021,915

R01 GM 40894
National Institutes of Health/National Institute of General Medical Sciences
Using the Chemistry of Iron(II) to Study DNA Structure
1/1/99 - 12/31/03
$878,842

R01 CA 54421 (PI: C. A. Townsend; co-PI: T. D. Tullius)
National Institutes of Health/National Cancer Institute
Diynene Antibiotics and their DNA Cleavage Chemistry
5/1/96 - 4/30/99
$750,327

R01 GM 41930
National Institutes of Health/National Institute of General Medical Sciences
Footprinting with Iron(II)-Generated Hydroxyl Radical
12/1/94 - 11/30/99
$766,152

R01 GM 40894
National Institutes of Health/National Institute of General Medical Sciences
Using the Chemistry of Iron(II) to Study DNA Structure
7/1/93 - 6/30/98
$768,161

R01 CA 54421 (PI: C. A. Townsend; co-PI: T. D. Tullius)
National Institutes of Health/National Cancer Institute
Diynene Antibiotics and their DNA Cleavage Chemistry
5/1/91 - 4/30/96

$873,532
R01 GM 41930
National Institutes of Health/National Institute of General Medical Sciences
Footprinting with Iron(II)-Generated Hydroxyl Radical
4/1/89 - 8/31/94
$746,063

R01 GM 40894
National Institutes of Health/National Institute of General Medical Sciences
Using the Chemistry of Iron(II) to Study DNA Structure
7/1/88 - 6/30/93
$701,495

Camille and Henry Dreyfus Teacher-Scholar Award
1988-1993
$50,000

Alfred P. Sloan Foundation Research Fellowship
9/16/88 - 9/15/90
$25,000

K04 CA 01208
National Institutes of Health/National Cancer Institute
Research Career Development Award
4/1/87 - 3/31/92
Using Metals to Study DNA and DNA-Protein Complexes
$295,905

R01 CA 37444
National Institutes of Health/National Cancer Institute
7/1/85 - 6/30/88
Metal Complexes and Enzymes as Probes of DNA Structure
$254,904

84-C-103
Searle Scholar Award
7/1/84 - 6/30/87
Transition Metal Complexes as Probes of DNA Structure
$157,500

Research Corporation
Cottrell Research Grant
Local Variation of Helical Twist in DNA
7/1/83 - 6/30/85
$11,000

Petroleum Research Fund of the American Chemical Society
Type G grant, #14838-G3
6/1/83 - 5/31/85
Sequence Specificity of an Antitumor Drug Modified by Changes in DNA Secondary Structure
$15,000

FORMER GRADUATE STUDENTS

Robert Azad
Bhavani Balasubramanian
Sarah Bernard
Julie Blake
Amanda Burkhoff
Cheryl Chiang
Mair Churchill
Truc Diep
Wendy Dixon
Beth Dombroski
Guangcheng Dong
Alexandra Draganescu
Marie Estock
Ruth Ganunis
Timothy Gay
Jason Greenbaum
Hong Guo
Jeffrey Hayes
Shakti Ingle
Celeste Jamison
Amy Kimball
Prasad Kuduvalli
Stanley Mah
Lori Ottinger
Bo Pang
Stephen Parker
Wendy Pogozelski
Mary Ann Price
Beatriz Russell
Qun Wang
Margaret Weidner
Long Xu

CURRENT POSTDOCTORAL ASSOCIATES

Sarah Bernard

FORMER POSTDOCTORAL ASSOCIATES

John Bashkin
Suzie Byun
Bingzi Chen
Richard Frazee
Gurpreet Gill
Nicholas Hammond
Robert Herbst
Swapan Jain
Elizabeth Jamieson
Judith Levin
Nathalie Madern
Alison Moore
Clare Rittschof
Mahadevan Sethuraman
Ky Sha
Susan Shadle
Natalia Simukova
Hari K.K. Subramanian
J-M. Yuann
Long Xu
Dana Zafiropoulos