Fred H. Gage PhD
Adler Professor
Laboratory of Genetics

Salk Institute for Biological Studies
10010 N Torrey Pines Rd
La Jolla, California 92037
PH (858) 453-4100 x1012
gage@salk.edu
www.salk.edu

May 20, 2024

Salk Institute Appointments Committee
Tanya Sharpe and Sam Pfaff, Co-Chairs

Dear Tanya and Sam,

Re: Reappointments of Ian Wilson and James Williamson as Adjunct Professors

We are in full support of the reappointments of Drs. Ian Wilson and Jamie Williamson, two of the world leaders in structural biology.

Dr. Wilson is the Hansen Professor of Structural Biology at the Scripps Research and a world-renowned expert in using protein crystallography to define antibody structures, most recently reporting the structures of several neutralizing monoclonal antibodies against the SARS-CoV2 virus, establishing exactly where their binding sites map on the surface of the viral spike protein. He is currently collaborating with Dmitry Lyumkis and Tony Hunter on a project related to the antibody recognition of phosphohistidine protein modifications, and they have recently submitted a paper where they used antibody engineering to increase the affinity of an anti-phosphohistidine monoclonal antibody 10-fold, making it a more useful community reagent.

Dr. Williamson is Professor of Chemistry and Integrative Structural & Computational Biology at Scripps Research. His research program involves understanding the structural role of RNA in mediating its many biological functions. He was elected to the NAS in 2022. His fruitful collaborations with Dmitry Lyumkis have resulted in several publications, most recently an article in *Nature Communications* entitled "Assembly landscape for the bacterial large ribosomal subunit.", and another in submission: https://www.biorxiv.org/content/10.1101/2024.04.10.588894v1.

With the continued success of Dmitry Lyumkis' research program, our utilization of cryo-EM technologies has increased. Currently, Salk has a contract with Scripps Research to allow our faculty the use of their cryo-EM facilities. Drs. Wilson and Williamson continue to facilitate the discussions around our continued ability to use the Scripps Research facilities, and for this reason their reappointment as adjunct faculty is vital. They have both also committed to giving a lecture to the Salk community.

Thank you for your consideration of these two reappointments. Attached are their updated CVs and Service/Contribution Forms.

Sincerely,

Rusty Gage Ron Evans Tony Hunter Joe Noel

Salk Adjunct Service/Contributions Form

Name: James Williamson **Appointment Start Date:** 7/1/24
Sponsors: Evans/Noel/Hunter

To be eligible for appointment and reappointment in the Adjunct series, appointees are expected to be engaged in **at least two** Institute-related activities outlined below. If you are being considered for your first Adjunct Professor appointment, provide information about your plans to engage in the Salk community and select any of the activities you would be interested in below. If you are being considered for reappointment, select your ongoing activities and give a brief summary of your engagement in each activity during the past appointment period. Also provide a summary of your plans to engage in the Salk activities during the next appointment period.

Salk Activities (list the course/seminar titles, committees, and student names if known)
** Please note research collaborations with a Salk Faculty sponsor(s) do not qualify as Institute-related activities expected for an Adjunct position*

- ☒ Giving Seminars, such as those hosted by Sponsors or by the Institute
- ☐ Teaching in Salk-organized courses
- ☐ Serving on UCSD Student Review committees and/or Thesis Committees in Salk Labs
- ☐ Reviewing Postdoctoral and other Internal Grants
- ☐ Participating in Salk's outreach and educational efforts to recruit underrepresented minority student applicants
- ☐ Consulting on Salk scientific initiatives or multi-PI grants
- ☒ Serving on Faculty Review Committees
- ☐ Promoting award and nomination opportunities for Salk Faculty
- ☐ Organizing or participating on Salk Meetings or Conferences
- ☐ Other

Salk Service Summary & Plans: Describe your plans to engage in the activities marked above during the next appointment period (i.e.: Salk Course or Seminar Titles, names of Student or Faculty review committee, description of contributions to grants, etc. if unable to fit above). If you are being considered for reappointment, also describe your engagement in the Salk activities during the last appointment period. You may attach a supplemental letter with these activities as needed.

My primary role as Adjunct will be continued service on the faculty advisory committee for Dmitry Lyumkis.

James Russell Williamson

Department of Integrative Structural and Computational Biology
Department of Chemistry
The Skaggs Institute for Chemical Biology
The Scripps Research Institute

10550 North Torrey Pines Road
La Jolla, CA 92037

Office: 858-784-8740
Email: jrwill@scripps.edu

Assistant: Julia Polay
Email: jpolay@scripps.edu
Mail code: SR-312
http://williamson.scripps.edu

Birthdate: January 3rd, 1960, Weymouth, MA

Education:

1981-1988 Doctor of Philosophy in Organic Chemistry, Stanford University, Stanford, CA
Advisor: Dr. Steven G. Boxer

1977-81 Bachelor of Science in Chemistry, Mount Union College, Alliance, OH

Administrative Experience:

The Scripps Research Institute, La Jolla, CA

2017-2022 Executive Vice President, Research and Academic Affairs
2015-2017 Vice President, Academic Affairs
2008-2017 Dean, Graduate & Postdoctoral Studies
2001-2008 Associate Dean, Graduate Studies

Research Experience:

The Scripps Research Institute, La Jolla, CA

1997 – present Professor. Department of Integrative, Structural and Computational Biology
2018 – present Adjunct Professor, Salk Institute, La Jolla, CA

Massachusetts Institute of Technology, Cambridge, MA

1995-1997 Associate Professor. Department of Chemistry
1990-1995 Assistant Professor. Department of Chemistry

University of Colorado, Boulder, CO

1988-1990 Postdoctoral Fellow. Laboratory of Dr. Thomas R. Cech
Chemical studies on the in vitro structure of telomeric oligonucleotides.

Stanford University, Stanford, CA

1983-1988 Graduate Research Assistant. Laboratory of Dr. Steven G. Boxer
NMR studies on synthetic DNA Hairpins.
1981-1983 Graduate Research Assistant. Laboratory of Dr. Michael C. Pirrung
Total synthesis of the sesquiterpene pentalenolactone.

Battelle Memorial Institute, Columbus, OH

1980 Research Assistant. Laboratory of Dr. Allison Fentiman

Awards and Honors:

National Academy of Sciences, 2022
American Academy of Arts and Sciences, 2010
Camille Dreyfus Teacher-Scholar Award, 1995
Alfred P. Sloan Fellow, 1995-1997
Rita Allen Scholar Award, 1994-1997
Searle Scholar Award, 1991-1994
Pfizer-Laubach Career Development Professorship, 1991-1994
Postdoctoral Fellowship awarded by The Jane Coffin Childs Memorial Fund for Medical Research, 1988-1990
Graduation with Honors in Chemistry and General Honors, 1981
Outstanding Senior Chemistry Major, 1981
Alpha Lambda Delta Chemistry Honorary, 1980
Outstanding Junior Chemistry Major, 1980

Outside Professional Activities:

Professional Societies:

American Chemical Society
Biophysical Society
The RNA Society
American Society for Biochemistry and Molecular Biology

Editorial Boards:

Associate Editor, *Annual Review of Biophysics and Biomolecular Structure*, 2003-2013
Board of Editors, *ACS Chemical Biology*, 2006-2015
BMC-Biology, 2009-present
Biopolymers, 2008-present
Structure, 2004-present
RNA, 1997-2018
Chemistry and Biology/ Cell Chemical Biology, 1994-2020
Molecular Cell, 2003-2015
Journal of Magnetic Resonance, 2000-2003
Folding and Design, 1996-1999

Grant Review Boards:

National Institutes of Health, BBCA/MSFB Study Section Member, 2000-2005
American Cancer Society, Panel Member, 1996-2000
American Cancer Society, Nucleic Acids and Protein Section, *ad hoc* Member, 1995 & 1996

Advisory Boards:

Starr Cancer Consortium, 2011-present
Jane Coffin Childs Memorial Fund for Medical Research, 1999-2007
Council of the RNA Society, 1999-2000

Industrial Affiliations:

Scientific Advisory Board, Rectify Pharmaceuticals, 2021-present
Scientific Advisory Board, Beryllium Inc, 2015-2017
Founder, Navis Biosciences, 2011-2012
Consultant, Illumina, Inc, 2010-2011
Director, RGo Biosciences, LLC 2008-2011
Consultant, Ambit Biosciences, 2007-2008
Consultant, Vertex Pharmaceuticals, 2006-2007
Founder, Cassia, LLC 2004-present
Scientific Advisory Board, Ribonovix, 2004-2007

Scientific Advisory Board, Nucleonics, Inc, 2002-2005
Scientific Advisory Board, Genformatics, Inc, 2001-2002
Consultant, ScriptGen Pharmaceuticals, 1992-2000

Research Interests:

Ribosome assembly, RNA-protein interactions, Virus assembly, RNA modifications, Quantitative Proteomic studies of bacterial physiology, Multidisciplinary biophysics approaches to assembly dynamics: Mass spectrometry, Electron microscopy, fluorescence, X-ray crystallography, NMR.

Research Publications

https://www.ncbi.nlm.nih.gov/myncbi/james.williamson.1/bibliography/public/

https://scholar.google.com/citations?user=tuzMchcAAAAJ&hl=en&oi=ao
H-index = 79 (Google-scholar)

Guessous G, Patsalo V, Balakrishnan R, Çağlar T, Williamson JR, Hwa T. Inherited chitinases enable sustained growth and rapid dispersal of bacteria from chitin particles. Nat Microbiol. 8, 1695-1705, 2023.

Sheng K, Li N, Rabuck-Gibbons JN, Dong X, Lyumkis D, Williamson JR. Assembly landscape for the bacterial large ribosomal subunit. Nat Commun. 14, 5220, 2023.

Dong X, Doerfel LK, Sheng K, Rabuck-Gibbons JN, Popova AM, Lyumkis D, Williamson JR. Near-physiological in vitro assembly of 50S ribosomes involves parallel pathways. Nucleic Acids Res. 51, 2862-2876, 2023.

Gu, W, Müller, AL, Deutzmann, JS, Williamson, JR, Spormann, AM, Growth rate-dependent coordination of catabolism and anabolism in the archaeon Methanococcus maripaludis under phosphate limitation. The ISME Journal, 1-7, 2022.

D'Ascenzo, L, Popova, AM, Abernathy, S, Sheng, K, Limbach, PA, Williamson, JR, Pytheas: a software package for the automated analysis of RNA sequences and modifications via tandem mass spectrometry. Nature Communications 13 (1), 1-12, 2, 2022.

Chawla, R, Klupt, S, Patsalo, V, Williamson, JR, Racki, LR. The Histone H1-like protein AlgP facilitates even spacing of polyphosphate granules in Pseudomonas aeruginosa. Mbio, e02463-21,1, 2022.

Rabuck-Gibbons, Lyumkis, D, Williamson, JR. Quantitative mining of compositional heterogeneity in cryo-EM datasets of ribosome assembly intermediates. Structure 30 (4), 498-509. e4 1, 2022.

Müller, AL, Gu, W, Patsalo, V, Deutzmann. JS, Williamson, JR, Spormann, AM.
An alternative resource allocation strategy in the chemolithoautotrophic archaeon Methanococcus maripaludis. Proceedings of the National Academy of Sciences 118 (16), e2025854118, 8, 2021.

Deng, YS , Hammond, JA , Pauszek, R , Ozog, S , Chai, I , Rabuck-Gibbons, J , Lamichhane, R , Henderson, SC , Millar, DP , Torbett, BE , Williamson, JR. Discrimination between functional and non-functional cellular gag complexes involved in HIV-1 assembly. Journal of Molecular Biology 433 (8), 166842, 4, 2021.

Kochanowski, K, Okano, H, Patsalo, V, Williamson, J, Sauer, U, Hwa, T.

Global coordination of metabolic pathways in Escherichia coli by active and passive regulation. Molecular Systems Biology 17 (4), e10064, 12, 2021.

Basan M, Honda T, Christodoulou D, Hörl M, Chang YF, Leoncini E, Mukherjee A, Okano H, Taylor BR, Silverman JM, Sanchez C, Williamson JR, Paulsson J, Hwa T, Sauer U. A universal trade-off between growth and lag in fluctuating environments. Nature. 2020 Aug;584(7821):470-474. doi: 10.1038/s41586-020-2505-4. Epub 2020 Jul 15. PubMed PMID: 32669712; PubMed Central PMCID: PMC7442741.

Rabuck-Gibbons JN, Popova AM, Greene EM, Cervantes CF, Lyumkis D, Williamson JR. SrmB Rescues Trapped Ribosome Assembly Intermediates. J Mol Biol. 2020 Feb 14;432(4):978-990. doi: 10.1016/j.jmb.2019.12.013. Epub 2019 Dec 23. PubMed PMID: 31877323; PubMed Central PMCID: PMC7106940.

Duss O, Stepanyuk GA, Puglisi JD, Williamson JR. Transient Protein-RNA Interactions Guide Nascent Ribosomal RNA Folding. Cell. 2019 Nov 27;179(6):1357-1369.e16. doi: 10.1016/j.cell.2019.10.035. Epub 2019 Nov 21. PubMed PMID: 31761533; PubMed Central PMCID: PMC7006226.

Razi A, Davis JH, Hao Y, Jahagirdar D, Thurlow B, Basu K, Jain N, Gomez-Blanco J, Britton RA, Vargas J, Guarné A, Woodson SA, Williamson JR, Ortega J. Role of Era in assembly and homeostasis of the ribosomal small subunit. Nucleic Acids Res. 2019 Sep 5;47(15):8301-8317. doi: 10.1093/nar/gkz571. PubMed PMID: 31265110; PubMed Central PMCID: PMC6736133

Craveur P, Gres AT, Kirby KA, Liu D, Hammond JA, Deng Y, Forli S, Goodsell DS, Williamson JR, Sarafianos SG, Olson AJ. Novel Intersubunit Interaction Critical for HIV-1 Core Assembly Defines a Potentially Targetable Inhibitor Binding Pocket. MBio. 2019 Mar 12;10(2). doi: 10.1128/mBio.02858-18. PubMed PMID: 30862755; PubMed Central PMCID: PMC6414707.

Duss O, Stepanyuk GA, Grot A, O'Leary SE, Puglisi JD, Williamson JR. Real-time assembly of ribonucleoprotein complexes on nascent RNA transcripts. Nat Commun. 2018 Nov 30;9(1):5087. doi: 10.1038/s41467-018-07423-3. PubMed PMID: 30504830; PubMed Central PMCID: PMC6269517.

Solis GM, Kardakaris R, Valentine ER, Bar-Peled L, Chen AL, Blewett MM, McCormick MA, Williamson JR, Kennedy B, Cravatt BF, Petrascheck M. Translation attenuation by minocycline enhances longevity and proteostasis in old post-stress-responsive organisms. Elife. 2018 Nov 27;7. doi: 10.7554/eLife.40314. PubMed PMID: 30479271; PubMed Central PMCID: PMC6257811.

Hammond JA, Zhou L, Lamichhane R, Chu HY, Millar DP, Gerace L, Williamson JR. A Survey of DDX21 Activity During Rev/RRE Complex Formation. J Mol Biol. 2018 Feb 16;430(4):537-553. doi: 10.1016/j.jmb.2017.06.023. Epub 2017 Jul 10. PubMed PMID: 28705764; PubMed Central PMCID: PMC5762417.

Erickson DW, Schink SJ, Patsalo V, Williamson JR, Gerland U, Hwa T. A global resource allocation strategy governs growth transition kinetics of Escherichia coli. Nature. 2017 Nov 2;551(7678):119-123. doi: 10.1038/nature24299. Epub 2017 Oct 25. PubMed PMID: 29072300; PubMed Central PMCID: PMC5901684.

Basan M, Hui S, Williamson JR. ArcA overexpression induces fermentation and results in enhanced growth rates of E. coli. Sci Rep. 2017 Sep 19;7(1):11866. doi: 10.1038/s41598-017-12144-6. PubMed PMID: 28928483; PubMed Central PMCID: PMC5605494.

Tan YZ, Baldwin PR, Davis JH, Williamson JR, Potter CS, et al. Addressing preferred specimen orientation in single-particle cryo- EM through tilting. Nat Methods. 2017 Aug;14(8):793-796. PubMed PMID: 28671674; NIHMSID: NIHMS873451; PubMed Central PMCID: PMC5533649.

Lamichhane R, Hammond JA, Pauszek RF 3rd, Anderson RM, Pedron I, et al. A DEAD-box protein acts through RNA to promote HIV-1 Rev-RRE assembly. Nucleic Acids Res. 2017 May 5;45(8):4632-4641. PubMed PMID: 28379444; PubMed Central PMCID: PMC5416872.

Hammond JA, Lamichhane R, Millar DP, Williamson JR. A DEAD-Box Helicase Mediates an RNA Structural Transition in the HIV-1 Rev Response Element. J Mol Biol. 2017 Mar 10;429(5):697-714. PubMed PMID: 28153748; NIHMSID: NIHMS850288; PubMed Central PMCID: PMC5510989.

Jin HY, Oda H, Chen P, Yang C, Zhou X, et al. Differential Sensitivity of Target Genes to Translational Repression by miR-17~92. PLoS Genet. 2017 Feb;13(2):e1006623. PubMed PMID: 28241004; PubMed Central PMCID: PMC5348049.

Dai X, Zhu M, Warren M, Balakrishnan R, Patsalo V, et al. Reduction of translating ribosomes enables Escherichia coli to maintain elongation rates during slow growth. Nat Microbiol. 2016 Dec 12;2:16231. PubMed PMID: 27941827; NIHMSID: NIHMS852722; PubMed Central PMCID: PMC5346290.

Davis JH, Tan YZ, Carragher B, Potter CS, Lyumkis D, et al. Modular Assembly of the Bacterial Large Ribosomal Subunit. Cell. 2016 Dec 1;167(6):1610-1622.e15. PubMed PMID: 27912064; NIHMSID: NIHMS831352; PubMed Central PMCID: PMC5145266.

Lavergne T, Lamichhane R, Malyshev DA, Li Z, Li L, et al. FRET Characterization of Complex Conformational Changes in a Large 16S Ribosomal RNA Fragment Site-Specifically Labeled Using Unnatural Base Pairs. ACS Chem Biol. 2016 May 20;11(5):1347-53. PubMed PMID: 26942998; NIHMSID: NIHMS767600; PubMed Central PMCID: PMC4874843.

Stepanyuk GA, Serrano P, Peralta E, Farr CL, Axelrod HL, et al. UHM-ULM interactions in the RBM39-U2AF65 splicing-factor complex. Acta Crystallogr D Struct Biol. 2016 Apr;72(Pt 4):497-511. PubMed PMID: 27050129; PubMed Central PMCID: PMC4822562.

Earnest TM, Lai J, Chen K, Hallock MJ, Williamson JR, et al. Toward a Whole-Cell Model of Ribosome Biogenesis: Kinetic Modeling of SSU Assembly. Biophys J. 2015 Sep 15;109(6):1117-35. PubMed PMID: 26333594; PubMed Central PMCID: PMC4576174.

Gomez-Amaro RL, Valentine ER, Carretero M, LeBoeuf SE, Rangaraju S, et al. Measuring Food Intake and Nutrient Absorption in Caenorhabditis elegans. Genetics. 2015 Jun;200(2):443-54. PubMed PMID: 25903497; PubMed Central PMCID: PMC4492371.

Hui S, Silverman JM, Chen SS, Erickson DW, Basan M, et al. Quantitative proteomic analysis reveals a simple strategy of global resource allocation in bacteria. Mol Syst Biol. 2015 Feb 12;11(1):784. PubMed PMID: 25678603; PubMed Central PMCID: PMC4358657.

Sashital DG, Greeman CA, Lyumkis D, Potter CS, Carragher B, et al. A combined quantitative mass spectrometry and electron microscopy analysis of ribosomal 30S subunit assembly in E coli. Elife. 2014 Oct 14;3. PubMed PMID: 25313868; PubMed Central PMCID: PMC4371863.

Gulati M, Jain N, Davis JH, Williamson JR, Britton RA. Functional interaction between ribosomal protein L6 and RbgA during ribosome assembly. PLoS Genet. 2014 Oct;10(10):e1004694. PubMed PMID: 25330043; PubMed Central PMCID: PMC4199504.

Stokes JM, Davis JH, Mangat CS, Williamson JR, Brown ED. Discovery of a small molecule that inhibits bacterial ribosome biogenesis. Elife. 2014 Sep 18;3:e03574. PubMed PMID: 25233066; PubMed Central PMCID: PMC4371806.

Jomaa A, Jain N, Davis JH, Williamson JR, Britton RA, et al. Functional domains of the 50S subunit mature late in the assembly process. Nucleic Acids Res. 2014 Mar;42(5):3419-35. PubMed PMID: 24335279; PubMed Central PMCID: PMC3950693.

Popova AM, Williamson JR. Quantitative analysis of rRNA modifications using stable isotope labeling and mass spectrometry. J Am Chem Soc. 2014 Feb 5;136(5):2058-69. PubMed PMID: 24422502; PubMed Central PMCID: PMC3985470.

Head SR, Komori HK, LaMere SA, Whisenant T, Van Nieuwerburgh F, et al. Library construction for next-generation sequencing: overviews and challenges. Biotechniques. 2014;56(2):61-4, 66, 68, passim. PubMed PMID: 24502796; NIHMSID: NIHMS580820; PubMed Central PMCID: PMC4351865.

Ridgeway WK, Millar DP, Williamson JR. Vectorized data acquisition and fast triple-correlation integrals for Fluorescence Triple Correlation Spectroscopy. Comput Phys Commun. 2013 Apr 1;184(4):1322-1332. PubMed PMID: 23525193; NIHMSID: NIHMS435524; PubMed Central PMCID: PMC3601675.

Chen SS, Williamson JR. Characterization of the ribosome biogenesis landscape in E coli using quantitative mass spectrometry. J Mol Biol. 2013 Feb 22;425(4):767-79. PubMed PMID: 23228329; NIHMSID: NIHMS427804; PubMed Central PMCID: PMC3568210.

Wu J, Campbell ZT, Menichelli E, Wickens M, Williamson JR. A proteinprotein interaction platform involved in recruitment of GLD-3 to the FBFfem-3 mRNA complex. J Mol Biol. 2013 Feb 22;425(4):738-54. PubMed PMID: 23159559; NIHMSID: NIHMS423153; PubMed Central PMCID: PMC3568228.

Menichelli E, Wu J, Campbell ZT, Wickens M, Williamson JR. Biochemical characterization of the Caenorhabditis elegans FBFCPB-1 translational regulation complex identifies conserved protein interaction hotspots. J Mol Biol. 2013 Feb 22;425(4):725-37. PubMed PMID: 23159558; NIHMSID: NIHMS423149; PubMed Central PMCID: PMC3568192.

Beuck C, Qu S, Fagg WS, Ares M Jr, Williamson JR. Structural analysis of the quaking homodimerization interface. J Mol Biol. 2012 Nov 9;423(5):766-81. PubMed PMID: 22982292; NIHMSID: NIHMS407084; PubMed Central PMCID: PMC3472039.

Chen SS, Sperling E, Silverman JM, Davis JH, Williamson JR. Measuring the dynamics of E coli ribosome biogenesis using pulse- labeling and quantitative mass spectrometry. Mol Biosyst. 2012 Oct 30;8(12):3325-34. PubMed PMID: 23090316; NIHMSID: NIHMS417154; PubMed Central PMCID: PMC3501348.

Ridgeway WK, Millar DP, Williamson JR. Quantitation of ten 30S ribosomal assembly intermediates using fluorescence triple correlation spectroscopy. Proc Natl Acad Sci U S A. 2012 Aug 21;109(34):13614-9. PubMed PMID: 22869699; PubMed Central PMCID: PMC3427059.

Campbell ZT, Bhimsaria D, Valley CT, Rodriguez-Martinez JA, Menichelli E, et al. Cooperativity in RNA-protein interactions: global analysis of RNA binding specificity. Cell Rep. 2012 May 31;1(5):570-81. PubMed PMID: 22708079; NIHMSID: NIHMS376327; PubMed Central PMCID: PMC3375920.

Campbell ZT, Menichelli E, Friend K, Wu J, Kimble J, et al. Identification of a conserved interface between PUF and CPEB proteins. J Biol Chem. 2012 May 25;287(22):18854-62. PubMed PMID: 22496444; PubMed Central PMCID: PMC3365739.

Ridgeway WK, Millar DP, Williamson JR. The spectroscopic basis of fluorescence triple correlation spectroscopy. J Phys Chem B. 2012 Feb 16;116(6):1908-19. PubMed PMID: 22229664; NIHMSID: NIHMS356094; PubMed Central PMCID: PMC3293655.

Kerkow DE, Carmel AB, Menichelli E, Ambrus G, Hills RD Jr, et al. The structure of the NXF2/NXT1 heterodimeric complex reveals the combined specificity and versatility of the NTF2-like fold. J Mol Biol. 2012 Jan 27;415(4):649-65. PubMed PMID: 22123199; NIHMSID: NIHMS340900; PubMed Central PMCID: PMC3265607.

Menichelli E, Edgcomb SP, Recht MI, Williamson JR. The structure of Aquifex aeolicus ribosomal protein S8 reveals a unique subdomain that contributes to an extremely tight association with 16S rRNA. J Mol Biol. 2012 Jan 20;415(3):489-502. PubMed PMID: 22079365; NIHMSID: NIHMS344317; PubMed Central PMCID: PMC3259246.

Edgcomb SP, Carmel AB, Naji S, Ambrus-Aikelin G, Reyes JR, et al. DDX1 is an RNA-dependent ATPase involved in HIV-1 Rev function and virus replication. J Mol Biol. 2012 Jan 6;415(1):61-74. PubMed PMID: 22051512; NIHMSID: NIHMS340642; PubMed Central PMCID: PMC3249508.

Shoji S, Dambacher CM, Shajani Z, Williamson JR, Schultz PG. Systematic chromosomal deletion of bacterial ribosomal protein genes. J Mol Biol. 2011 Nov 4;413(4):751-61. PubMed PMID: 21945294; NIHMSID: NIHMS325408; PubMed Central PMCID: PMC3694390.

Robertson-Anderson RM, Wang J, Edgcomb SP, Carmel AB, Williamson JR, et al. Single-molecule studies reveal that DEAD box protein DDX1 promotes oligomerization of HIV-1 Rev on the Rev response element. J Mol Biol. 2011 Jul 29;410(5):959-71. PubMed PMID: 21763499; NIHMSID: NIHMS292613; PubMed Central PMCID: PMC3140434.

Schultheisz HL, Szymczyna BR, Scott LG, Williamson JR. Enzymatic de novo pyrimidine nucleotide synthesis. J Am Chem Soc. 2011 Jan 19;133(2):297-304. PubMed PMID: 21166398; NIHMSID: NIHMS259588; PubMed Central PMCID: PMC3134529.

Mulder AM, Yoshioka C, Beck AH, Bunner AE, Milligan RA, et al. Visualizing ribosome biogenesis: parallel assembly pathways for the 30S subunit. Science. 2010 Oct 29;330(6004):673-7. PubMed PMID: 21030658; NIHMSID: NIHMS250656; PubMed Central PMCID: PMC2990404.

Sykes MT, Shajani Z, Sperling E, Beck AH, Williamson JR. Quantitative proteomic analysis of ribosome assembly and turnover in vivo. J Mol Biol. 2010 Oct 29;403(3):331-45. PubMed PMID: 20709079; NIHMSID: NIHMS230466; PubMed Central PMCID: PMC2953596.

Carmel AB, Wu J, Lehmann-Blount KA, Williamson JR. High-affinity consensus binding of target RNAs by the STAR/GSG proteins GLD-1, STAR-2 and Quaking. BMC Mol Biol. 2010 Jun 23;11:48. PubMed PMID: 20573244; PubMed Central PMCID: PMC2905418.

Sykes MT, Sperling E, Chen SS, Williamson JR. Quantitation of the ribosomal protein autoregulatory network using mass spectrometry. Anal Chem. 2010 Jun 15;82(12):5038-45. PubMed PMID: 20481440; NIHMSID: NIHMS207385; PubMed Central PMCID: PMC2894367.

Bunner AE, Nord S, Wikström PM, Williamson JR. The effect of ribosome assembly cofactors on in vitro 30S subunit reconstitution. J Mol Biol. 2010 Apr 23;398(1):1-7. PubMed PMID: 20188109; NIHMSID: NIHMS192901; PubMed Central PMCID: PMC2866118.

Bunner AE, Beck AH, Williamson JR. Kinetic cooperativity in Escherichia coli 30S ribosomal subunit reconstitution reveals additional complexity in the assembly landscape. Proc Natl Acad Sci U S A. 2010 Mar 23;107(12):5417-22. PubMed PMID: 20207951; PubMed Central PMCID: PMC2851750.

Beuck C, Szymczyna BR, Kerkow DE, Carmel AB, Columbus L, et al. Structure of the GLD-1 homodimerization domain: insights into STAR protein-mediated translational regulation. Structure. 2010 Mar 10;18(3):377-89. PubMed PMID: 20223220; NIHMSID: NIHMS177462; PubMed Central PMCID: PMC2837851.

Ridgeway WK, Seitaridou E, Phillips R, Williamson JR. RNA-protein binding kinetics in an automated microfluidic reactor. Nucleic Acids Res. 2009 Nov;37(21):e142. PubMed PMID: 19759214; PubMed Central PMCID: PMC2790880.

Schultheisz HL, Szymczyna BR, Williamson JR. Enzymatic synthesis and structural characterization of 13C, 15N-poly(ADP- ribose). J Am Chem Soc. 2009 Oct 14;131(40):14571-8. PubMed PMID: 19757771; NIHMSID: NIHMS146298; PubMed Central PMCID: PMC2758922.

Sharpe Elles LM, Sykes MT, Williamson JR, Uhlenbeck OC. A dominant negative mutant of the E coli RNA helicase DbpA blocks assembly of the 50S ribosomal subunit. Nucleic Acids Res. 2009 Oct;37(19):6503-14. PubMed PMID: 19734347; PubMed Central PMCID: PMC2770675.

El Yacoubi B, Lyons B, Cruz Y, Reddy R, Nordin B, et al. The universal YrdC/Sua5 family is required for the formation of threonylcarbamoyladenosine in tRNA. Nucleic Acids Res. 2009 May;37(9):2894-909. PubMed PMID: 19287007; PubMed Central PMCID: PMC2685093.

Szymczyna BR, Taurog RE, Young MJ, Snyder JC, Johnson JE, et al. Synergy of NMR, computation, and X-ray crystallography for structural biology. Structure. 2009 Apr 15;17(4):499-507. PubMed PMID: 19368883; NIHMSID: NIHMS111248; PubMed Central PMCID: PMC2705668.

Bunner AE, Trauger SA, Siuzdak G, Williamson JR. Quantitative ESI-TOF analysis of macromolecular assembly kinetics. Anal Chem. 2008 Dec 15;80(24):9379-86. PubMed PMID: 19007188; NIHMSID: NIHMS86685; PubMed Central PMCID: PMC2735594.

Carlomagno T, Amata I, Williamson JR, Hennig M. NMR assignments of HIV-2 TAR RNA. Biomol NMR Assign. 2008 Dec;2(2):167-9. PubMed PMID: 19636896.

Sykes MT, Williamson JR. Envelope: interactive software for modeling and fitting complex isotope distributions. BMC Bioinformatics. 2008 Oct 20;9:446. PubMed PMID: 18937869; PubMed Central PMCID: PMC2605472.

Schultheisz HL, Szymczyna BR, Scott LG, Williamson JR. Pathway engineered enzymatic de novo purine nucleotide synthesis. ACS Chem Biol. 2008 Aug 15;3(8):499-511. PubMed PMID: 18707057; NIHMSID: NIHMS122639; PubMed Central PMCID: PMC2746247.

Sperling E, Bunner AE, Sykes MT, Williamson JR. Quantitative analysis of isotope distributions in proteomic mass spectrometry using least-squares Fourier transform convolution. Anal Chem. 2008 Jul 1;80(13):4906-17. PubMed PMID: 18522437; NIHMSID: NIHMS58005; PubMed Central PMCID: PMC2502059.

Naidoo N, Harrop SJ, Sobti M, Haynes PA, Szymczyna BR, et al. Crystal structure of Lsm3 octamer from Saccharomyces cerevisiae: implications for Lsm ring organisation and recruitment. J Mol Biol. 2008 Apr 11;377(5):1357-71. PubMed PMID: 18329667.

Edgcomb SP, Aschrafi A, Kompfner E, Williamson JR, Gerace L, et al. Protein structure and oligomerization are important for the formation of export-competent HIV-1 Rev-RRE complexes. Protein Sci. 2008 Mar;17(3):420-30. PubMed PMID: 18218716; PubMed Central PMCID: PMC2248316.

Hennig M, Scott LG, Sperling E, Bermel W, Williamson JR. Synthesis of 5-fluoropyrimidine nucleotides as sensitive NMR probes of RNA structure. J Am Chem Soc. 2007 Dec 5;129(48):14911-21. PubMed PMID: 17990877.

Szymczyna BR, Gan L, Johnson JE, Williamson JR. Solution NMR studies of the maturation intermediates of a 13 MDa viral capsid. J Am Chem Soc. 2007 Jun 27;129(25):7867-76. PubMed PMID: 17536799.

Karnaukhov AV, Karnaukhova EV, Williamson JR. Numerical Matrices Method for nonlinear system identification and description of dynamics of biochemical reaction networks. Biophys J. 2007 May 15;92(10):3459-73. PubMed PMID: 17350997; PubMed Central PMCID: PMC1853128.

Vallurupalli P, Scott L, Williamson JR, Kay LE. Strong coupling effects during X-pulse CPMG experiments recorded on heteronuclear ABX spin systems: artifacts and a simple solution. J Biomol NMR. 2007 May;38(1):41-6. PubMed PMID: 17334825.

Vallurupalli P, Scott L, Hennig M, Williamson JR, Kay LE. New RNA labeling methods offer dramatic sensitivity enhancements in 2H NMR relaxation spectra. J Am Chem Soc. 2006 Jul 26;128(29):9346-7. PubMed PMID: 16848466.

Hennig M, Munzarova ML, Bermel W, Scott LG, Sklenar V, et al. Measurement of long-range 1H-19F scalar coupling constants and their glycosidic torsion dependence in 5-fluoropyrimidine-substituted RNA. J Am Chem Soc. 2006 May 3;128(17):5851-8. PubMed PMID: 16637654; NIHMSID: NIHMS61028; PubMed Central PMCID: PMC2556634.

Talkington MW, Siuzdak G, Williamson JR. An assembly landscape for the 30S ribosomal subunit. Nature. 2005 Dec 1;438(7068):628-32. PubMed PMID: 16319883; NIHMSID: NIHMS7092; PubMed Central PMCID: PMC1444899.

Chao JA, Lee JH, Chapados BR, Debler EW, Schneemann A, et al. Dual modes of RNA-silencing suppression by Flock House virus protein B2. Nat Struct Mol Biol. 2005 Nov;12(11):952-7. PubMed PMID: 16228003.

Davis JH, Tonelli M, Scott LG, Jaeger L, Williamson JR, et al. RNA helical packing in solution: NMR structure of a 30 kDa GAAA tetraloop-receptor complex. J Mol Biol. 2005 Aug 12;351(2):371-82. PubMed PMID: 16002091.

Scott LG, Williamson JR. The binding interface between Bacillus stearothermophilus ribosomal protein S15 and its 5'-translational operator mRNA. J Mol Biol. 2005 Aug 12;351(2):280-90. PubMed PMID: 16005889.

Lehmann-Blount KA, Williamson JR. Shape-specific nucleotide binding of single-stranded RNA by the GLD-1 STAR domain. J Mol Biol. 2005 Feb 11;346(1):91-104. PubMed PMID: 15663930.

Recht MI, Williamson JR. RNA tertiary structure and cooperative assembly of a large ribonucleoprotein complex. J Mol Biol. 2004 Nov 19;344(2):395-407. PubMed PMID: 15522293.

Scott LG, Geierstanger BH, Williamson JR, Hennig M. Enzymatic synthesis and 19F NMR studies of 2-fluoroadenine-substituted RNA. J Am Chem Soc. 2004 Sep 29;126(38):11776-7. PubMed PMID: 15382896.

Ryder SP, Williamson JR. Specificity of the STAR/GSG domain protein Qk1: implications for the regulation of myelination. RNA. 2004 Sep;10(9):1449-58. PubMed PMID: 15273320; PubMed Central PMCID: PMC1370631.

Chao JA, Williamson JR. Joint X-ray and NMR refinement of the yeast L30e-mRNA complex. Structure. 2004 Jul;12(7):1165-76. PubMed PMID: 15242593.

Torres FE, Kuhn P, De Bruyker D, Bell AG, Wolkin MV, et al. Enthalpy arrays. Proc Natl Acad Sci U S A. 2004 Jun 29;101(26):9517-22. PubMed PMID: 15210951; PubMed Central PMCID: PMC470707.

Ryder SP, Frater LA, Abramovitz DL, Goodwin EB, Williamson JR. RNA target specificity of the STAR/GSG domain post- transcriptional regulatory protein GLD-1. Nat Struct Mol Biol. 2004 Jan;11(1):20-8. PubMed PMID: 14718919.

Klostermeier D, Sears P, Wong CH, Millar DP, Williamson JR. A three-fluorophore FRET assay for high-throughput screening of small-molecule inhibitors of ribosome assembly. Nucleic Acids Res. 2004;32(9):2707-15. PubMed PMID: 15148358; PubMed Central PMCID: PMC419595.

Johnson EC, Feher VA, Peng JW, Moore JM, Williamson JR. Application of NMR SHAPES screening to an RNA target. J Am Chem Soc. 2003 Dec 24;125(51):15724-5. PubMed PMID: 14677945.

Gonsalvez GB, Lehmann KA, Ho DK, Stanitsa ES, Williamson JR, et al. RNA-protein interactions promote asymmetric sorting of the ASH1 mRNA ribonucleoprotein complex. RNA. 2003 Nov;9(11):1383-99. PubMed PMID: 14561888; PubMed Central PMCID: PMC1287060.

Cilley CD, Williamson JR. Structural mimicry in the phage phi21 N peptide-boxB RNA complex. RNA. 2003 Jun;9(6):663-76. PubMed PMID: 12756325; PubMed Central PMCID: PMC1370434.

Hoggan DB, Chao JA, Prasad GS, Stout CD, Williamson JR. Combinatorial crystallization of an RNA-protein complex. Acta Crystallogr D Biol Crystallogr. 2003 Mar;59(Pt 3):466-73. PubMed PMID: 12595703.

Chao JA, Prasad GS, White SA, Stout CD, Williamson JR. Inherent protein structural flexibility at the RNA-binding interface of L30e. J Mol Biol. 2003 Feb 28;326(4):999-1004. PubMed PMID: 12589748.

Kim HD, Nienhaus GU, Ha T, Orr JW, Williamson JR, et al. Mg2+-dependent conformational change of RNA studied by fluorescence correlation and FRET on immobilized single molecules. Proc Natl Acad Sci U S A. 2002 Apr 2;99(7):4284-9. PubMed PMID: 11929999; PubMed Central PMCID: PMC123640.

Dayie KT, Brodsky AS, Williamson JR. Base flexibility in HIV-2 TAR RNA mapped by solution (15)N, (13)C NMR relaxation. J Mol Biol. 2002 Mar 22;317(2):263-78. PubMed PMID: 11902842.

Tang K, Shahgholi M, Garcia BA, Heaney PJ, Cantor CR, et al. Improvement in the apparent mass resolution of oligonucleotides by using 12C/14N-enriched samples. Anal Chem. 2002 Jan 1;74(1):226-31. PubMed PMID: 11795798.

Carlomagno T, Hennig M, Williamson JR. A novel PH-cT-COSY methodology for measuring JPH coupling constants in unlabeled nucleic acids application to HIV-2 TAR RNA. J Biomol NMR. 2002 Jan;22(1):65-81. PubMed PMID: 11885982.

Scott LG, Williamson JR. Interaction of the Bacillus stearothermophilus ribosomal protein S15 with its 5'-translational operator mRNA. J Mol Biol. 2001 Nov 30;314(3):413-22. PubMed PMID: 11846555.

Recht MI, Williamson JR. Central domain assembly: thermodynamics and kinetics of S6 and S18 binding to an S15-RNA complex. J Mol Biol. 2001 Oct 12;313(1):35-48. PubMed PMID: 11601845.

Hennig M, Carlomagno T, Williamson JR. Residual dipolar coupling TOCSY for direct through space correlations of base protons and phosphorus nuclei in RNA. J Am Chem Soc. 2001 Apr 11;123(14):3395-6. PubMed PMID: 11457087.

Treiber DK, Williamson JR. Concerted kinetic folding of a multidomain ribozyme with a disrupted loop-receptor interaction. J Mol Biol. 2001 Jan 5;305(1):11-21. PubMed PMID: 11114243.

Agalarov SC, Sridhar Prasad G, Funke PM, Stout CD, Williamson JR. Structure of the S15,S6,S18-rRNA complex: assembly of the 30S ribosome central domain. Science. 2000 Apr 7;288(5463):107-13. PubMed PMID: 10753109.

Hennig M, Williamson JR. Detection of N-HN hydrogen bonding in RNA via scalar couplings in the absence of observable imino proton resonances. Nucleic Acids Res. 2000 Apr 1;28(7):1585-93. PubMed PMID: 10710425; PubMed Central PMCID: PMC102791.

Agalarov SC, Williamson JR. A hierarchy of RNA subdomains in assembly of the central domain of the 30 S ribosomal subunit. RNA. 2000 Mar;6(3):402-8. PubMed PMID: 10744024; PubMed Central PMCID: PMC1369922.

Mao H, White SA, Williamson JR. A novel loop-loop recognition motif in the yeast ribosomal protein L30 autoregulatory RNA complex. Nat Struct Biol. 1999 Dec;6(12):1139-47. PubMed PMID: 10581556.

Rook MS, Treiber DK, Williamson JR. An optimal Mg(2+) concentration for kinetic folding of the tetrahymena ribozyme. Proc Natl Acad Sci U S A. 1999 Oct 26;96(22):12471-6. PubMed PMID: 10535946; PubMed Central PMCID: PMC22953.

Mao H, Williamson JR. Assignment of the L30-mRNA complex using selective isotopic labeling and RNA mutants. Nucleic Acids Res. 1999 Oct 15;27(20):4059-70. PubMed PMID: 10497271; PubMed Central PMCID: PMC148674.

Mao H, Williamson JR. Local folding coupled to RNA binding in the yeast ribosomal protein L30. J Mol Biol. 1999 Sep 17;292(2):345-59. PubMed PMID: 10493880.

Ha T, Zhuang X, Kim HD, Orr JW, Williamson JR, et al. Ligand-induced conformational changes observed in single RNA molecules. Proc Natl Acad Sci U S A. 1999 Aug 3;96(16):9077-82. PubMed PMID: 10430898; PubMed Central PMCID: PMC17735.

Zamore PD, Bartel DP, Lehmann R, Williamson JR. The PUMILIO-RNA interaction: a single RNA-binding domain monomer recognizes a bipartite target sequence. Biochemistry. 1999 Jan 12;38(2):596-604. PubMed PMID: 9888799.

Rook MS, Treiber DK, Williamson JR. Fast folding mutants of the Tetrahymena group I ribozyme reveal a rugged folding energy landscape. J Mol Biol. 1998 Aug 28;281(4):609-20. PubMed PMID: 9710534.

Batey RT, Williamson JR. Effects of polyvalent cations on the folding of an rRNA three-way junction and binding of ribosomal protein S15. RNA. 1998 Aug;4(8):984-97. PubMed PMID: 9701289; PubMed Central PMCID: PMC1369675.

Brodsky AS, Erlacher HA, Williamson JR. NMR evidence for a base triple in the HIV-2 TAR C-GC+ mutant-argininamide complex. Nucleic Acids Res. 1998 Apr 15;26(8):1991-5. PubMed PMID: 9518494; PubMed Central PMCID: PMC147484.

Treiber DK, Rook MS, Zarrinkar PP, Williamson JR. Kinetic intermediates trapped by native interactions in RNA folding. Science. 1998 Mar 20;279(5358):1943-6. PubMed PMID: 9506945.

Orr JW, Hagerman PJ, Williamson JR. Protein and Mg(2+)-induced conformational changes in the S15 binding site of 16 S ribosomal RNA. J Mol Biol. 1998 Jan 23;275(3):453-64. PubMed PMID: 9466923.

Dayie KT, Tolbert TJ, Williamson JR. 3D C(CC)H TOCSY experiment for assigning protons and carbons in uniformly 13C- and selectively 2H-labeled RNA. J Magn Reson. 1998 Jan;130(1):97-101. PubMed PMID: 9469903.

Zamore PD, Williamson JR, Lehmann R. The Pumilio protein binds RNA through a conserved domain that defines a new class of RNA-binding proteins. RNA. 1997 Dec;3(12):1421-33. PubMed PMID: 9404893; PubMed Central PMCID: PMC1369583.

Brodsky AS, Williamson JR. Solution structure of the HIV-2 TAR-argininamide complex. J Mol Biol. 1997 Apr 4;267(3):624-39. PubMed PMID: 9126842.

Curtis D, Treiber DK, Tao F, Zamore PD, Williamson JR, et al. A CCHC metal-binding domain in Nanos is essential for translational regulation. EMBO J. 1997 Feb 17;16(4):834-43. PubMed PMID: 9049312; PubMed Central PMCID: PMC1169684.

Sun B, Rienstra CM, Costa PR, Williamson JR. 3D 15N-13C-13C Chemical Shift Correlation Spectroscopy in Rotating Solids. Journal of the American Chemical Society. 1997; 119:8540-8546.

Tolbert TJ, Williamson JR. Preparation of Specifically Deuterated and 13C-labeled RNA for NMR Studies using Enzymatic Synthesis. Journal of the American Chemical Society. 1997; 119:12100-12108.

Cilley CD, Williamson JR. Analysis of bacteriophage N protein and peptide binding to boxB RNA using polyacrylamide gel coelectrophoresis (PACE). RNA. 1997 Jan;3(1):57-67. PubMed PMID: 8990399; PubMed Central PMCID: PMC1369462.

Rao NS, Legault P, Muhandiram DR, Greenblatt J, Battiste JL, et al. NMR pulse schemes for the sequential assignment of arginine side-chain H epsilon protons. J Magn Reson B. 1996 Dec;113(3):272-6. PubMed PMID: 8995846.

Batey RT, Cloutier N, Mao H, Williamson JR. Improved large-scale culture of Methylophilus methylotrophus for 13C/15N labeling and random fractional deuteration of ribonucleotides. Nucleic Acids Res. 1996 Dec 1;24(23):4836-7. PubMed PMID: 8972874; PubMed Central PMCID: PMC146305.

Battiste JL, Mao H, Rao NS, Tan R, Muhandiram DR, et al. Alpha helix-RNA major groove recognition in an HIV-1 rev peptide- RRE RNA complex. Science. 1996 Sep 13;273(5281):1547-51. PubMed PMID: 8703216.

Batey RT, Williamson JR. Interaction of the Bacillus stearothermophilus ribosomal protein S15 with 16 S rRNA: II Specificity determinants of RNA-protein recognition. J Mol Biol. 1996 Aug 30;261(4):550-67. PubMed PMID: 8794876.

Batey RT, Williamson JR. Interaction of the Bacillus stearothermophilus ribosomal protein S15 with 16 S rRNA: I Defining the minimal RNA site. J Mol Biol. 1996 Aug 30;261(4):536-49. PubMed PMID: 8794875.

Zarrinkar PP, Wang J, Williamson JR. Slow folding kinetics of RNase P RNA. RNA. 1996 Jun;2(6):564-73. PubMed PMID: 8718685; PubMed Central PMCID: PMC1369395.

Zarrinkar PP, Williamson JR. The kinetic folding pathway of the Tetrahymena ribozyme reveals possible similarities between RNA and protein folding. Nat Struct Biol. 1996 May;3(5):432-8. PubMed PMID: 8612073.

Zarrinkar PP, Williamson JR. The P91-P92 peripheral extension helps guide folding of the Tetrahymena ribozyme. Nucleic Acids Res. 1996 Mar 1;24(5):854-8. PubMed PMID: 8600452; PubMed Central PMCID: PMC145724.

Tolbert TJ, Williamson JR. Preparation of deuterated RNA for NMR Studies using a combination of chemical and enzymatic synthesis. Journal of the American Chemical Society. 1996; 118:7929-7940.

Battiste JL, Tan R, Frankel AD, Williamson JR. Assignment and modeling of the Rev Response Element RNA bound to a Rev peptide using 13C-heteronuclear NMR. J Biomol NMR. 1995 Dec;6(4):375-89. PubMed PMID: 8563466.

Treiber DK, Williamson JR. A simple method for preparing pools of synthetic oligonucleotides with random point deletions. Nucleic Acids Res. 1995 Sep 11;23(17):3603-4. PubMed PMID: 7567476; PubMed Central PMCID: PMC307244.

Puglisi EV, Puglisi JD, Williamson JR, RajBhandary UL. NMR analysis of tRNA acceptor stem microhelices: discriminator base change affects tRNA conformation at the 3' end. Proc Natl Acad Sci U. S. A. 1994 Nov 22;91(24):11467-71. PubMed PMID: 7972085; PubMed Central PMCID: PMC45252.

Zarrinkar PP, Williamson JR. Kinetic intermediates in RNA folding. Science. 1994 Aug 12;265(5174):918-24. PubMed PMID: 8052848.

Battiste JL, Tan R, Frankel AD, Williamson JR. Binding of an HIV Rev peptide to Rev responsive element RNA induces formation of purine-purine base pairs. Biochemistry. 1994 Mar 15;33(10):2741-7. PubMed PMID: 8130185.

Dias E, Battiste JL, Williamson JR. A chemical probe for glycosidic confirmation in telomeric DNA's. Journal of the American Chemical Society. 1994; 106:4479-4480.

Puglisi JD, Chen L, Frankel AD, Williamson JR. Role of RNA structure in arginine recognition of TAR RNA. Proc Natl Acad Sci U. S. A. 1993 Apr 15;90(8):3680-4. PubMed PMID: 7682716; PubMed Central PMCID: PMC46365.

Batey RT, Inada M, Kujawinski E, Puglisi JD, Williamson JR. Preparation of isotopically labeled ribonucleotides for multidimensional NMR spectroscopy of RNA. Nucleic Acids Res. 1992 Sep 11;20(17):4515-23. PubMed PMID: 1383928; PubMed Central PMCID: PMC334179.

Puglisi JD, Tan R, Calnan BJ, Frankel AD, Williamson JR. Conformation of the TAR RNA-arginine complex by NMR spectroscopy. Science. 1992 Jul 3;257(5066):76-80. PubMed PMID: 1621097.

Publications from postdoctoral work

Zahler AM, Williamson JR, Cech TR, Prescott DM. Inhibition of telomerase by G-quartet DNA structures. Nature. 1991 Apr 25;350(6320):718-20. PubMed PMID: 2023635.

Williamson JR, Celander DW. Rapid procedure for chemical sequencing of small oligonucleotides without ethanol precipitation. Nucleic Acids Res. 1990 Jan 25;18(2):379. PubMed PMID: 2183187; PubMed Central PMCID: PMC330294.

Williamson JR, Raghuraman MK, Cech TR. Monovalent cation-induced structure of telomeric DNA: the G-quartet model. Cell. 1989 Dec 1;59(5):871-80. PubMed PMID: 2590943.

Publications from thesis work

Eimer W, Williamson JR, Boxer SG, Pecora R. Characterization of the overall and internal dynamics of short oligonucleotides by depolarized dynamic light scattering and NMR relaxation measurements. Biochemistry. 1990 Jan 23;29(3):799-811. PubMed PMID: 2337597.

Williamson JR, Boxer SG. Multinuclear NMR studies of DNA hairpins 1 Structure and dynamics of d(CGCGTTGTTCGCG). Biochemistry. 1989 Apr 4;28(7):2819-31. PubMed PMID: 2742814.

Williamson JR, Boxer SG. Multinuclear NMR studies of DNA hairpins 2 Sequence-dependent structural variations. Biochemistry. 1989 Apr 4;28(7):2831-6. PubMed PMID: 2742815.

Williamson JR, Boxer SG. Synthesis of a thymidine phosphoramidite labelled with 13C at C6: relaxation studies of the loop region in a 13C labelled DNA hairpin. Nucleic Acids Res. 1988 Feb 25;16(4):1529-40. PubMed PMID: 3347496; PubMed Central PMCID: PMC336332.

Invited Reviews and Commentaries

Williamson JR. Really exasperating viral protein from HIV. Elife. 2015 Jan 9;4. PubMed PMID: 25574642; PubMed Central PMCID: PMC4337408.

Ban N, Beckmann R, Cate JH, Dinman JD, Dragon F, et al. A new system for naming ribosomal proteins. Curr Opin Struct Biol. 2014 Feb;24:165-9. PubMed PMID: 24524803; NIHMSID: NIHMS669242; PubMed Central PMCID: PMC4358319.

Puglisi JD, Williamson JR. Digging deep into nucleic acid structure and nucleic acid protein recognition. Curr Opin Struct Biol. 2012 Jun;22(3):249-50. PubMed PMID: 22632873.

Shajani Z, Sykes MT, Williamson JR. Assembly of bacterial ribosomes. Annu Rev Biochem. 2011;80:501-26. PubMed PMID: 21529161.

Puglisi JD, Williamson JR. Nucleic acids continue to surprise. Curr Opin Struct Biol. 2010 Jun;20(3):259-61. PubMed PMID: 20510604.

Williamson JR. The ribosome at atomic resolution. Cell. 2009 Dec 11;139(6):1041-3. PubMed PMID: 20005796.

Bunner AE, Williamson JR. Stable isotope pulse-chase monitored by quantitative mass spectrometry applied to E coli 30S ribosome assembly kinetics. Methods. 2009 Oct;49(2):136-41. PubMed PMID: 19559090; NIHMSID: NIHMS135192; PubMed Central PMCID: PMC2753762.

Williamson JR. My h-index turns 40: my midlife crisis of impact. ACS Chem Biol. 2009 May 15;4(5):311-3. PubMed PMID: 19441857.

Sykes MT, Williamson JR. A complex assembly landscape for the 30S ribosomal subunit. Annu Rev Biophys. 2009;38:197-215. PubMed PMID: 19416066.

Recht MI, Ryder SP, Williamson JR. Monitoring assembly of ribonucleoprotein complexes by isothermal titration calorimetry. Methods Mol Biol. 2008;488:117-27. PubMed PMID: 18982287; NIHMSID: NIHMS223193; PubMed Central PMCID: PMC2922068.

Ryder SP, Recht MI, Williamson JR. Quantitative analysis of protein-RNA interactions by gel mobility shift. Methods Mol Biol. 2008;488:99-115. PubMed PMID: 18982286; NIHMSID: NIHMS223195; PubMed Central PMCID: PMC2928675.

Williamson JR. Assembly of the 30S ribosomal subunit in vitro and in cells, in Steitz, T. (ed.), The Mechanisms of Ribosome Function: Insights into protein synthesis, The Biomedical & Life Sciences Collection, Henry Stewart Talks Ltd (online at http://ow.ly/8kWn30eoZ1Y), 2008.

Williamson JR. Cooperativity in macromolecular assembly. Nat Chem Biol. 2008 Aug;4(8):458-65. PubMed PMID: 18641626.

Williamson JR. Biophysical studies of bacterial ribosome assembly. Curr Opin Struct Biol. 2008 Jun;18(3):299-304. PubMed PMID: 18541423; NIHMSID: NIHMS56792; PubMed Central PMCID: PMC2494948.

Tahmassebi DC, Williamson JR. Balancing teaching and research in obtaining a faculty position at a predominantly undergraduate institution. ACS Chem Biol. 2007 Aug 17;2(8):521-4. PubMed PMID: 17708667.

Kiessling LL, Doudna JA, Johnsson K, Mapp AK, Marletta MA, et al. A higher degree of difficulty. ACS Chem Biol. 2007 Apr 24;2(4):197-9. PubMed PMID: 17455890.

Leontis NB, Altman RB, Berman HM, Brenner SE, Brown JW, et al. The RNA Ontology Consortium: an open invitation to the RNA community. RNA. 2006 Apr;12(4):533-41. PubMed PMID: 16484377; PubMed Central PMCID: PMC1421088.

Williamson JR. Assembly of the 30S ribosomal subunit. Q Rev Biophys. 2005 Nov;38(4):397-403. PubMed PMID: 16934171.

Cech TR, Moras D, Nagai K, Williamson JR. The RNP World. *RNA World III*, 309-326. Gesteland RF, Cech TR & Atkins JF (eds.) Cold Spring Harbor Laboratory Press, 2005.

Fedor MJ, Williamson JR. The catalytic diversity of RNAs. Nat Rev Mol Cell Biol. 2005 May;6(5):399-412. PubMed PMID: 15956979.

Williamson JR. RNA Folding in Ribosome Assembly. *Folding and Self-Assembly of Biological Macromolecules,* Proceedings of the Deuxiemes Entretiens du Bures, E. Westhof, N. Hardy eds., World Scientific Publishing Co., New Jersey, 2004.

Williamson JR. After the ribosome structures: how are the subunits assembled? RNA. 2003 Feb;9(2):165-7. PubMed PMID: 12554857; PubMed Central PMCID: PMC1370380.

Williamson JR. Proteins that bind RNA and the labs who love them. Nat Struct Biol. 2001 May;8(5):390-1. PubMed PMID: 11323709.

Recht MI, Williamson JR. Thermodynamics and Kinetics of Central Domain Assembly. *Cold Spring Harbor Symposium on Quantitative Biology.* 66;591-598, 2001.

Treiber DK, Williamson JR. Beyond kinetic traps in RNA folding. Curr Opin Struct Biol. 2001 Jun;11(3):309-14. Review. PubMed PMID: 11406379.

Williamson JR. Molecular biology. Small subunit, big science. Nature. 2000 Sep 21;407(6802):306-7. PubMed PMID: 11014170.

Williamson JR. Induced fit in RNA-protein recognition. Nat Struct Biol. 2000 Oct;7(10):834-7. Review. PubMed PMID: 11017187.

Hennig M, Brodsky AS, Battiste JL, Williamson JR. Recent Advances in RNA Structure Determination by NMR. Curr Prot Nuc Acids Chem, 2000;7.7.1-7.7.29.

Cilley CD, Williamson JR. PACE Analysis of RNA-peptide Interactions. Meth Mol Biol 1999;118:129-141. In *RNA-Protein Interaction Protocols*, Susan R. Haynes, Ed.

Treiber DK, Williamson JR. Exposing the kinetic traps in RNA folding. Curr Opin Struct Biol. 1999 Jun;9(3):339-45. Review. PubMed PMID: 10361090.

Scott LG, Tolbert TJ, Williamson JR. Preparation of specifically 2H- and 13C-labeled ribonucleotides. Methods Enzymol. 2000;317:18-38. PubMed PMID: 10829270.

Treiber DK, Williamson JR. Kinetic oligonucleotide hybridization for monitoring kinetic folding of large RNAs. Methods Enzymol. 2000;317:330-53. PubMed PMID: 10829289.

Puglisi JD, Williamson JR. RNA Interaction with Small Ligands and Peptides. *RNA World II,* Cold Spring Harbor Laboratory Press, 1997.

Tan R, Brodsky A, Williamson JR, Frankel AD. RNA Recognition by HIV-1 Tat and Rev. Seminars in Virology 1997;8:186-193.

Williamson JR. Aptly named aptamers display their aptitude. Nature. 1996 Jul 11;382(6587):112-3. PubMed PMID: 8700196.

Batey RT, Battiste JL, Williamson JR. Preparation of isotopically enriched RNAs for heteronuclear NMR. Meth Enzymo 1995;261:300-322.

Williamson JR. RNA origami. Nat Struct Biol. 1994 May;1(5):270-2. PubMed PMID: 7545071.

Williamson JR. G-quartet structures in telomeric DNA. Annu Rev Biophys Biomol Struct. 1994;23:703-30. Review. PubMed PMID: 7919797.

Williamson JR, Frankel AD. The TAR RNA-arginine complex. Structure, 1993 introductory issue, x-xi.

Williamson JR. G-quartets in biology: reprise. Proc Natl Acad Sci U S A. 1993 Apr 15;90(8):3124. Review. PubMed PMID: 7682693; PubMed Central PMCID: PMC46251.

Williamson JR. Guanine quartets. Curr Opin Struct Biol. 1993;3(3):357-362.