

## CURRICULUM VITAE

### **Roy Parker**

Howard Hughes Medical Institute  
Department of Biochemistry  
University of Colorado Boulder  
596 UCB, 3415 Colorado Ave  
Jennie Smoly Caruthers Biotechnology Building  
Boulder, CO 80309  
United States

#### ***EDUCATION:***

- Postdoctoral: University of Massachusetts Medical School, 1/88-9/89  
(Laboratory of Dr. Allan Jacobson)  
University of California at San Diego, 10/86-12/87  
(Laboratory of Dr. Michael Yaffe)  
University of California at San Francisco, 4/85-9/86  
(Laboratory of Dr. Christine Guthrie)
- Ph.D.: University of California at San Francisco, 1985  
(Genetics)
- B.S.: Carnegie Mellon University, Pittsburgh, PA, 1979  
(Chemistry)

#### ***ACADEMIC POSITIONS:***

- 1989-1995 Assistant Professor  
Department of Molecular and Cellular Biology, University of Arizona
- 1994-1997 Assistant Investigator  
Howard Hughes Medical Institute
- 1995-1998 Associate Professor  
Department of Molecular and Cellular Biology, University of Arizona
- 1997-2002 Associate Investigator  
Howard Hughes Medical Institute
- 1998-2001 Professor  
Department of Molecular and Cellular Biology, University of Arizona
- 2001-2012 Regents' Professor  
Department of Molecular and Cellular Biology, University of Arizona
- 2002-present Investigator  
Howard Hughes Medical Institute
- 2012-present Cech-Leinwand Endowed Chair of Biochemistry, and Professor, Department  
of Biochemistry, University of Colorado Boulder
- 2018-present Distinguished Professor, Department of Biochemistry, University of  
Colorado Boulder

***OTHER PROFESSIONAL ACTIVITIES:***

1996-1997 Member, Defense Science Study Group  
1996-2005 Consultant, Institute for Defense Analyses  
1997 Co-Chair, Gordon Conference on Nucleic Acids  
1999 Co-Organizer, CSHL Conference on RNA Processing  
1997-2000 Member, NIH Molecular Biology Study Section  
1999-2000 Chair, NIH Molecular Biology Study Section  
2004 Co-Organizer FASEB Conference on Post-Transcriptional Control

***HONORS:***

Regents' Fellowship (1979)  
Searle Scholarship (1990)  
Keynote Speaker, Michigan RNA Conference (2000)  
Keynote Speaker, FASEB Conference on Post-transcriptional Regulation (2002)  
Regents' Professor (2003)  
Galileo Fellow (2003)  
NIH Merit Award (2004)  
Keynote Speaker, EMBO Workshop, Switzerland (2005)  
Keynote Speaker, Translation Control Meeting, Heidelberg, Germany (2005)  
Keynote Speaker, Translation Control Meeting, Cold Spring Harbor Labs (2006)  
President, The RNA Society (2010)  
Fellow, American Academy of Arts & Sciences (2010)  
Keynote Speaker, EMBL (2011)  
Keynote Speaker, FASEB (2012)  
Member, National Academy of Sciences (2012)  
Keynote Speaker, EMBO Conference, Barga, Italy (2017)  
Keynote Speaker, City of Hope, Duarte, CA (2017)  
Keynote Speaker, 2<sup>nd</sup> International Symposium on Stress Granules, Heidelberg (2017)  
Keynote Speaker, SFB Symposium, Regensburg (2017)  
Keynote Speaker, 3<sup>rd</sup> International Brainstorm Symposium, University of Florida (2018)  
Keynote Speaker, Center for RNA Biomedicine Symposium, University of Michigan (2018)  
Distinguished Visitor Lecture Series, Max-Planck Institute of Biochemistry, Germany (2018)  
Keynote Speaker, Ionis/Nature Conference on RNA Biology, La Jolla, CA (2018)

***EDITOR & EDITORIAL BOARDS:***

Molecular and Cellular Biology 1994 - 1997  
Science Board of Reviewing Editors 1997 – 1999, 2001 - 2004  
RNA 1999 – present  
Nucleic Acids Research 2004 – 2017  
Editor, Journal of Cell Biology 2008 – 2017  
Cell 2009 – present  
Current Biology 2014 – present

## **PUBLICATIONS:**

### **ORIGINAL RESEARCH PAPERS**

1. Jones, E., Zubenko, G. and **R.R. Parker**. (1982) PEP4 gene function is required for expression of several vacuolar hydrolases in *Saccharomyces cerevisiae*. **Genetics** 102:679-690. [PMCID: PMC1201965](#)
2. **Parker, R.** and C. Guthrie. (1985) A point mutation in the conserved hexanucleotide at a yeast 5' splice site uncouples recognition, cleavage and ligation. **Cell** 41:107-118.
3. Cellini, A., **Parker, R.**, McMahon, J., Guthrie, C. and J. Rossi. (1986) Activation of a cryptic TACTAAC box in the yeast actin intron. **Molecular and Cellular Biology** 6:1571-1578. [PMCID: PMC367683](#)
4. Vijayraghavan, U., **Parker, R.**, Tamm, J., Iimura, Y., Rossi, J., Abelson, J.A. and C. Guthrie. (1986) Mutations in conserved intron sequences affect multiple steps in the yeast splicing pathway, particularly assembly of the spliceosome. **EMBO Journal** 5:1683-1695. [PMCID: PMC1166995](#)
5. Couto, J., Tamm, J., **Parker, R.** and C. Guthrie. (1987) A trans-acting suppressor restores splicing of a yeast intron with a branch point mutation. **Genes & Development** 1:445-455.
6. **Parker, R.**, Siliciano, P. and C. Guthrie. (1987) Recognition of the TACTAAC box during mRNA splicing in yeast involves base-pairing to the U2-like snRNA. **Cell** 49:229-239.
7. Ruohola, H., Baker, S.M., **Parker, R.** and T. Platt. (1988) Orientation-dependent function of a short CYC1 DNA fragment in directing mRNA 3' end formation in yeast. **Proceeding of the National Academy of Science** 85:5041-5045. [PMCID: PMC281683](#)
8. **Parker, R.**, Simmons, T., Shuster, E., Siliciano, P. and C. Guthrie. (1988) Genetic analysis of small nuclear RNAs in *Saccharomyces cerevisiae*: viable sextuple mutant. **Molecular and Cellular Biology** 8:3150-3159. [PMCID: PMC363543](#)
9. **Parker, R.** and A. Jacobson. (1990) Translation and a 42-nucleotide segment within the coding region of the mRNA encoded by the *MAT $\alpha$ 1* gene are involved in promoting rapid mRNA decay in yeast. **Proceeding of the National Academy of Science** 87:2780-2784. [PMCID: PMC53774](#)
10. Herrick, D., **Parker, R.** and A. Jacobson. (1990) Identification and comparison of stable and unstable mRNAs in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 10:2269-2284. [PMCID: PMC360574](#)
11. Muhlrads, D., Hunter, R. and **R. Parker**. (1992) A rapid method for the localized mutagenesis of yeast genes. **Yeast** 8:79-82.

### Original Research Papers (continued)

12. Heaton, B., Decker, C., Muhlrاد, D., Donahue, J., Jacobson, A. and **R. Parker**. (1992) Analysis of chimeric mRNAs identifies multiple regions within yeast mRNAs that regulate mRNA decay. **Nucleic Acids Research** 20:5365-5373. [PMCID: PMC334343](#)
13. Muhlrاد, D. and **R. Parker**. (1992) Mutations affecting stability and deadenylation of the yeast MFA2 transcript. **Genes & Development** 6:2100-2111.
14. **Parker, R.** and P. Siliciano. (1993) Evidence for a non-Watson Crick interaction between the first and last nucleotides of a nuclear pre-mRNA intron. **Nature** 361:660-662.
15. Decker, C.J. and **R. Parker**. (1993) A turnover pathway for both stable and unstable mRNAs in yeast: evidence for a requirement for deadenylation. **Genes & Development** 7:1632-1643.
16. Caponigro, G., Muhlrاد, D. and **R. Parker**. (1993) A small segment of the MATa1 transcript promotes mRNA decay in yeast: a stimulatory role for rare codons. **Molecular and Cellular Biology** 13:5141-5148. [PMCID: PMC360202](#)
17. Beelman, C.A. and **R. Parker**. (1994) Differential effects of translational inhibition in cis and in trans on the decay of the unstable yeast MFA2 mRNA. **Journal of Biological Chemistry** 269:9687-9692.
18. Muhlrاد, D., Decker, C. and **R. Parker**. (1994) Deadenylation of the unstable mRNA encoded by the yeast MFA2 gene leads to decapping followed by 5' to 3' degradation of the transcript. **Genes & Development** 8:855-866.
19. Muhlrاد, D. and **R. Parker**. (1994) Premature translational termination triggers mRNA decapping. **Nature** 370:578-581.
20. Muhlrاد, D., Decker, C. and **R. Parker**. (1995) Turnover mechanisms of the stable PGK1 mRNA in yeast. **Molecular and Cellular Biology** 15:2145-2156. [PMCID: PMC230442](#)
21. Caponigro, G. and **R. Parker**. (1995) Multiple functions of the Poly(A) binding protein in mRNA decapping and deadenylation. **Genes & Development** 9:2421-2432.
22. Mandart, E. and **R. Parker**. (1995) Effects of mutations in the RNA14, RNA15, and PAP1 genes on polyadenylation and mRNA metabolism in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 15:6979-6986. [PMCID: PMC230953](#)
23. Hatfield, L., Beelman, C. A., Stevens A. and **R. Parker**. (1996) Mutations in trans-acting factors that inhibit mRNA decapping in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 16:5830-5838. [PMCID: PMC231584](#)
24. Beelman, C. A., Stevens A., Caponigro G., LaGrandeur, T.E., Hatfield L., Fortner, D. and **R. Parker**. (1996) An essential component of the decapping enzyme required for normal rates of mRNA decay in yeast. **Nature** 382:642-646.

### Original Research Papers (continued)

25. Caponigro, G. and **R. Parker**. (1996) mRNA Turnover in Yeast Promoted by the MATa1 Instability Element. **Nucleic Acids Research** 24:4304-4312. [PMCID: PMC146253](#)
26. Olivas, W. M., Muhlrاد, D. and **R. Parker**. (1997) Analysis of the yeast genome: identification of new non-coding and small ORF-containing RNAs. **Nucleic Acids Research** 25:4619-4625. [PMCID: PMC147069](#)
27. Anderson, J.S.J. and **R. Parker**. (1998) The 3' to 5' degradation of yeast mRNAs is a general mechanism for mRNA turnover that requires the SKI2 DEVH box protein and 3' to 5' exonucleases of the exosome complex. **EMBO Journal** 17:1497-1506. [PMCID: PMC1170497](#)
28. LaGrandeur, T.E. and **R. Parker**. (1998) Isolation and Characterization of Dcp1p, the yeast mRNA decapping enzyme. **EMBO Journal** 17:1487-1496. [PMCID: PMC1170496](#)
29. LaGrandeur, T. and **R. Parker**. (1999) The *cis* acting sequences responsible for the differential decay of the unstable MFA2 and stable PGK1 transcripts in yeast includes the context of the translational short codon. **RNA** 5:420-433. [PMCID: PMC1369770](#)
30. Tharun, S. and **R. Parker**. (1999) Analysis of mutations in the yeast mRNA decapping enzyme. **Genetics** 151:1273-1285. [PMCID: PMC1460575](#)
31. Schwartz, D. and **R. Parker**. (1999) Mutations in Translation Initiation Factors lead to increased rates of deadenylation and decapping of yeast mRNAs. **Molecular and Cellular Biology** 19:5247-5256. [PMCID: PMC84368](#)
32. Dunckley, T. and **R. Parker**. (1999) The DCP2 protein is required for mRNA decapping in *Saccharomyces cerevisiae* and contains a functional MutT motif. **EMBO Journal** 18: 5411-5422. [PMCID: PMC1171610](#)
33. Muhlrاد, D. and **R. Parker**. (1999) Recognition of Yeast mRNAs as "nonsense containing" leads to both inhibition of mRNA translation and mRNA degradation: Implications for the control of mRNA decapping. **Molecular Biology of the Cell** 10: 3971-3978. [PMCID: PMC25692](#)
34. Muhlrاد, D. and **R. Parker**. (1999) Aberrant mRNAs with extended 3' UTRs are substrates for rapid degradation by mRNA surveillance. **RNA** 5:1299-1307. [PMCID: PMC1369852](#)
35. van Hoof, A., Lennertz, P. and **R. Parker**. (2000) Yeast Exosome Mutants Accumulate 3'-Extended Polyadenylated Forms of U4 Small Nuclear RNA and Small Nucleolar RNAs. **Molecular and Cellular Biology** 20:441-452. [PMCID: PMC85098](#)
36. van Hoof, A., Lennertz, P. and **R. Parker**. (2000) Three conserved members of the RNase D family have unique and overlapping functions in the processing of 5S, 5.8S, U4, U5, RNase MRP and RNase P RNAs in yeast. **EMBO Journal** 19: 1357-1365. [PMCID: PMC305676](#)

### Original Research Papers (continued)

37. Tharun, S., He, W., Mayes, A.E., Lennertz, P., Beggs, J.D. and **R. Parker**. (2000) Yeast Sm-like proteins function in mRNA decapping and decay. **Nature** 404:515-518.
38. Jacobs Anderson, J.S. and **R. Parker**. (2000) Computational Identification of *Cis*-acting Elements Affecting Post-Transcriptional Control of Gene Expression in *Saccharomyces cerevisiae*. **Nucleic Acids Research** 28:1604-1617. [PMCID: PMC102784](#)
39. Schwartz, D. and **R. Parker**. (2000) mRNA decapping in yeast requires dissociation of the cap binding protein, eukaryotic translation initiation factor 4E. **Molecular and Cellular Biology** 20:7933-7942. [PMCID: PMC86404](#)
40. van Hoof, A., Staples, R.R., Baker, R.E. and **R. Parker**. (2000) Function of the Ski4p (Csl4p) and Ski7p proteins in 3'-to-5' degradation of mRNA. **Molecular and Cellular Biology** 20:8230-8243. [PMCID: PMC86432](#)
41. Olivas, W. and **R. Parker**. (2000) The Puf3 protein is a transcript-specific regulator of mRNA degradation in yeast. **EMBO Journal** 19:6602-6611. [PMCID: PMC305854](#)
42. Dunckley T., Tucker, M. and **R. Parker**. (2001) Two related proteins, Edc1p and Edc2p, stimulate mRNA decapping in *Saccharomyces cerevisiae*. **Genetics** 157:27-37. [PMCID: PMC1461477](#)
43. Tucker, M., Valencia-Sanchez M.A., Staples R., Chen J., Denis C.L. and **R. Parker**. (2001) The transcription factor associated proteins Ccr4 and Caf1 are components of the major cytoplasmic mRNA deadenylase in *Saccharomyces cerevisiae*. **Cell** 104:377-386.
44. Hilleren, P. and **R. Parker**. (2001) Defects in the mRNA export factors Rat7p, Gle1p, Mex67p and Rat8p cause hyperadenylation during 3' end formation of nascent transcripts. **RNA** 7:753-764. [PMCID: PMC1370127](#)
45. He, W. and **R. Parker**. (2001) The yeast cytoplasmic Lsm1/Pat1p complex protects mRNA 3' termini from partial degradation. **Genetics** 158:1445-1455. [PMCID: PMC1461746](#)
46. Cao, D. and **R. Parker**. (2001) Computational modeling of eukaryotic mRNA turnover. **RNA** 7:1192-1212. [PMCID: PMC1370166](#)
47. Tharun, S. and **R. Parker**. (2001) Targeting an mRNA for decapping: displacement of translation factors and association of the Lsm1p-7p complex on deadenylated yeast mRNAs. **Molecular Cell** 8:1075-1083.
48. Collier, J.M., Tucker, M., Sheth, U., Valencia-Sanchez, M.A. and **R. Parker**. (2001) The DEAD box helicase, Dhh1p, functions in mRNA decapping and interacts with both the decapping and deadenylase complexes. **RNA** 7:1717-1727. [PMCID: PMC1370212](#)
49. Hilleren, P., McCarthy, T., Rosbash, M., **Parker, R.** and Jensen, T.H. (2001) Quality control of mRNA 3'-end processing is linked to the nuclear exosome. **Nature** 413:538-542.

### Original Research Papers (continued)

50. Tucker, M., Staples, R.R., Valencia-Sanchez, M.A., Muhlrud, D. and **R. Parker**. (2002) Ccr4p is the catalytic sub-unit of a Ccr4/Pop2p/Notp mRNA deadenylase complex in *Saccharomyces cerevisiae*. **EMBO Journal** 21:1427-1436. [PMCID: PMC125913](#)
51. van Hoof, A., Frischmeyer, P.A., Dietz, H.C. and **R. Parker**. (2002) Exosome-mediated recognition and degradation of mRNAs lacking a termination codon. **Science** 295:2262-2264.
52. Frischmeyer, P.A., van Hoof, A., O'Donnell K., Guerrerio A.L., **Parker, R.** and H.C. Dietz. (2002) An mRNA Surveillance Mechanism that Eliminates Transcripts Lacking Termination Codons. **Science** 295:2258-2261.
53. Steiger, M., Carr-Schmid, A., Schwartz, D.C., Kiledjian, M. and **R. Parker**. (2003) Analysis of recombinant yeast decapping enzyme. **RNA** 9:231-238. [PMCID: PMC1370389](#)
54. Schwartz, D., Decker, C.J. and **R. Parker**. (2003) The Enhancer of Decapping Proteins, Edc1p and Edc2p, bind RNA and stimulate activity of the decapping enzyme. **RNA** 9:239-251. [PMCID: PMC1370390](#)
55. Sheth, U. and **R. Parker**. (2003) Decapping and decay of messenger RNA occur in cytoplasmic processing bodies. **Science** 300:805-808. [PMCID: PMC1876714](#)
56. Cao, D. and **R. Parker**. (2003) Computational Modeling and Experimental Analysis of Nonsense-Mediated Decay in Yeast. **Cell** 113:533-545.
57. Hilleren, P.J. and **R. Parker**. (2003) Cytoplasmic Degradation of Splice-Defective pre-mRNAs and Intermediates. **Molecular Cell** 12:1453-1465.
58. She, M., Decker, C.J., Sundramurthy, K., Liu, Y., Chen, N., **Parker, R.** and H. Song. (2004) Crystal Structure of Dcp1p and Its Functional Implications in mRNA Decapping. **Nature Structural & Molecular Biology** 11:249-256. [PMCID: PMC2040073](#)
59. Kshirsagar, M. and **R. Parker**. (2004) Identification of Edc3p as an enhancer of mRNA decapping in *Saccharomyces cerevisiae*. **Genetics** 166:729-739. [PMCID: PMC1470743](#)
60. Baker, K.E., Collier, J.M. and **R. Parker**. (2004) The yeast Apq1p affects nucleocytoplasmic mRNA transport. **RNA** 10:1352-1358. [PMCID: PMC1370622](#)
61. Cheng, Z., Liu, Y., Wang, C., **Parker R.** and H. Song. (2004) Crystal structure of Ski8p, a WD-repeat protein with dual roles in mRNA metabolism and meiotic recombination. **Protein Science** 13:2673-2684. [PMCID: PMC2001155](#)
62. Chen, N., Walsh, M.A., Liu, Y., **Parker, R.** and H. Song. (2005) Crystal structures of human DcpS in ligand-free and m<sup>7</sup>GDP-bound forms suggest a dynamic mechanism for scavenger mRNA decapping. **Journal of Molecular Biology** 347:707-718.

### Original Research Papers (continued)

63. Muhlrاد, D. and **R. Parker**. (2005) The yeast EDC1 mRNA undergoes deadenylation-independent decapping stimulated by Not2p, Not4p and Not5p. **EMBO Journal** 24:1033-1045. [PMCID: PMC554118](#)
64. Teixeira, D., Sheth, U., Valencia-Sanchez, MA, Brengues, M. and **R. Parker**. (2005) Processing bodies require RNA for assembly and contain non-translating mRNAs. **RNA** 11:371-382. [PMCID: PMC1370727](#)
65. Tharun, S., Muhlrاد, D., Chowdhury, A. and **R. Parker**. (2005) Mutations in the *Saccharomyces cerevisiae* LSM1 gene that affect mRNA decapping and 3' end protection. **Genetics** 170:33-46. [PMCID: PMC1449704](#)
66. Cheng, Z., Collier, J., **Parker, R.** and H. Song. (2005) Crystal structure and functional analysis of DEAD-box protein Dhh1p. **RNA** 11:1258-1270. [PMCID: PMC1370809](#)
67. Wilson, M.A., Meaux, S., **Parker, R.** and A. van Hoof. (2005). Genetic interactions between [*PSI*<sup>+</sup>] and nonstop mRNA decay affect phenotypic variation **Proceeding of the National Academy of Science** 102:10244-10249. [PMCID: PMC1173365](#)
68. Collier, J. and **R. Parker**. (2005) General Translational Repression by Activators of mRNA Decapping. **Cell** 122:875-886. [PMCID: PMC1853273](#)
69. Brengues, M., Teixeira, D. and **R. Parker**. (2005) Movement of Eukaryotic mRNAs Between Polysomes and Cytoplasmic Processing Bodies. **Science** 310:486-489. [PMCID: PMC1863069](#)
70. Liu, J., Valencia-Sanchez, M.A., Hannon, G.J. and **Parker, R.** (2005). MicroRNA-dependent localization of targeted mRNAs to mammalian P-bodies. **Nature Cell Biology** 7:719-723. [PMCID: PMC1855297](#)
71. Liu, J., Rivas, F.V., Wohlschlegel, J., Yates III, J.R., **Parker, R.** and G.J. Hannon. (2005) A role for the P-body component GW182 in microRNA function. **Nature Cell Biology** 7:1261-1266. [PMCID: PMC1804202](#)
72. Beliakova-Bethell, N., Beckham, C., Giddings Jr., T.H., Winey, M., **Parker, R.** and S. Sandmeyer. (2006) Virus-like particles of the Ty3 retrotransposon assemble in association with P-body components. **RNA** 12:94-101. [PMCID: PMC1370889](#)
73. She, M., Decker, C.J., Chen, N., Tumati, S., **Parker, R.** and H. Song. (2006) Crystal structure and functional analysis of Dcp2p from *Schizosaccharomyces pombe*. **Nature Structural and Molecular Biology** 13:63-70. [PMCID: PMC1952686](#)
74. Doma, M.K. and **R. Parker**. (2006) Endonucleolytic cleavage of eukaryotic mRNAs with stalls in translation elongation. **Nature** 440:561-564. [PMCID: PMC1839849](#)
75. Sheth, U. and **R. Parker**. (2006) Targeting of Aberrant mRNAs to Cytoplasmic Processing Bodies. **Cell** 125:1095-1109. [PMCID: PMC1858659](#)



### Original Research Papers (continued)

76. Hilgers, V., Teixeira, D. and **R. Parker**. (2006). Translation-independent inhibition of mRNA deadenylation during stress in *Saccharomyces cerevisiae*. **RNA** 12:1835-1845. [PMCID: PMC1581975](#)
77. Segal, S.P., Dunckley, T.C. and **R. Parker**. (2006) Sbp1p affects translational repression and decapping in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 26:5120-5130. [PMCID: PMC1489156](#)
78. Baker, K.E. and **R. Parker**. (2006) Conventional 3' end formation is not required for NMD substrate recognition in *Saccharomyces cerevisiae*. **RNA** 12:1441-1445.
79. Barbee, S.A., Estes, P.S., Cziko, A.-M., Hillebrand, J., Luedeman, R.A., Collier, J.M., Johnson, N., Howlett, I.C., Geng, C., Ueda, R., Brand, A.H., Newbury, S.F., Wilhelm, J.E., Levine, R.B., Nakamura, A., **Parker, R.**, and M. Ramaswami. (2006) Staufen- and FMRP-containing neuronal RNPs are structurally and functionally related to somatic P bodies. **Neuron** 52:997-1009. [PMCID: PMC1955741](#)
80. Thompson, D. M. and **R. Parker**. (2007) Cytoplasmic decay of intergenic transcripts in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 27:92-101. [PMCID: PMC1800667](#)
81. Cheng, Z., Muhrad, D., Lim, M.K., **Parker, R.** and H. Song (2007) Structural and functional insights into the human Upf1 helicase core. **EMBO Journal** 26:253-64. [PMCID: PMC1782376](#)
82. Teixeira, D. and **R. Parker**. (2007) Analysis of P-body Assembly in *Saccharomyces cerevisiae*. **Molecular Biology of the Cell** 18:2274-2287. [PMCID: PMC1877105](#)
83. Brengues, M. and **R. Parker**. (2007) Accumulation of polyadenylated mRNA, Pab1p, eIF4E, and eIF4G with P-bodies in *Saccharomyces cerevisiae*. **Molecular Biology of the Cell** 18:2592-2602. [PMCID: PMC1924816](#)
84. Beckham, C.J., Light, H.R., Nissan, T.A., Ahlquist, P., **Parker, R.**, and A. Nouiery. (2007) Interactions between Brome Mosaic Virus RNAs and Cytoplasmic Processing Bodies. **Journal of Virology** 81:9759-9768. [PMCID: PMC2045432](#)
85. Decker, C.J., Teixeira, D., and **R. Parker**. (2007) Edc3p and a glutamine/asparagine-rich domain of Lsm4p function in processing body assembly in *Saccharomyces cerevisiae*. **Journal of Cell Biology** 179:437-449. [PMCID: PMC2064791](#)
86. Pilkington, G.R., and **R. Parker**. (2008) Pat1 contains distinct functional domains that promote P-body assembly and activation of decapping. **Molecular and Cellular Biology** 28:1298-1312. [PMCID: PMC2258743](#)
87. Beckham, C.J., Hilliker, A., Cziko, A.-M., Noueiry, A., Ramaswami, M., and **R. Parker**. (2008) The DEAD-Box RNA helicase Ded1p affects and accumulates in *Saccharomyces cerevisiae* P-bodies. **Molecular Biology of the Cell** 19:984-993. [PMCID: PMC2262982](#)

### Original Research Papers (continued)

88. She, M., Decker, C., Svergun, D.I., Round, A., Chen, N., Muhlrاد, D., **Parker, R.**, and H. Song. (2008) Structural basis of Dcp2 recognition and activation by Dcp1. **Molecular Cell** 29:337-349. [PMCID: PMC2323275](#)
89. Nissan, T. and **R. Parker**. (2008) Computational analysis of miRNA-mediated repression of translation: Implications for models of translation initiation inhibition. **RNA** 14:1480-1491. [PMCID: PMC2491470](#)
90. Ling, S.H., Decker, C.J., Walsh, M.A., She, M., **Parker, R.** and H. Song (2008) Crystal structure of human Edc3 and its functional implications. **Molecular and Cellular Biology** 28:5965-5976. [PMCID: PMC2547010](#)
91. Pedro-Segura, E., Vergara, S.V., Rodríguez-Navarro, S., **Parker, R.**, Thiele, D.J. and S. Puig (2008) The Cth2 are-binding protein recruits the Dhh1 helicase to promote the decay of succinate dehydrogenase SDH4 mRNA in response to iron deficiency. **Journal of Biological Chemistry** 283:28527-28535. [PMCID: PMC2568921](#)
92. Thompson, D.M., Lu, C., Green, P.J. and **R. Parker**. (2008) tRNA cleavage is a conserved response to oxidative stress in eukaryotes. **RNA** 14:2095-2103. [PMCID: PMC2553748](#)
93. Buchan, J.R., Muhlrاد, D, and **R. Parker**. (2008) P-bodies promote Stress Granule assembly in *Saccharomyces cerevisiae*. **Journal of Cell Biology** 183:441-455. [PMCID: PMC2575786](#)
94. Balagopal, V. and **R. Parker**. (2009) Stm1 modulates mRNA decay and Dhh1 function in *Saccharomyces cerevisiae*. **Genetics** 181:93-103. [PMCID: PMC2621192](#)
95. Thompson, D. and **R. Parker**. (2009) The RNase Rny1p cleaves tRNAs and promotes cell death during oxidative stress in *Saccharomyces cerevisiae*. **Journal of Cell Biology** 185:43-50. [PMCID: PMC2700514](#)
96. Chekulaeva, M., Filipowicz, W. and **R. Parker**. (2009) Multiple independent domains of dGW182 function in miRNA-mediated repression in *Drosophila* **RNA** 15:794-803. [PMCID: PMC2673071](#) doi:10.1093/nar/gkp572
97. Passos, D.O., Doma, M.K, Shoemaker, C.J., Muhlrاد, D., Green, J., Weissman, J., Hollien, J. and **R. Parker**. (2009) Analysis of Dom34 and its function in No-Go Decay. **Molecular Biology of the Cell** 20:3025-3032. [PMCID: PMC2704154](#)
98. Luhtala, N. and **R. Parker**. (2009) LSM1 over-expression in *Saccharomyces cerevisiae* depletes U6 snRNA levels. **Nucleic Acids Research** 37:5529-5536. [PMCID: PMC2760792](#)
99. Cziko, A.-M.J., McCann, C.T., Howlett, I.C., Barbee, S.A., Duncan, R.P., Luedemann, R., Zarnescu, D., Zinsmaier, K.E., **Parker, R.R.**, and M. Ramaswami. (2009) Genetic Modifiers of *dFMR1* Encode RNA Granule Components in *Drosophila*. **Genetics** 182:1051-1060. [PMCID: PMC2728847](#)

### Original Research Papers (continued)

100. Harigaya, Y., Jones, B.N., Muhlrads, D., Gross, J.D., and **R. Parker**. (2010) Identification and Analysis of the interaction between Edc3 and Dcp2 in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 30:1446-1456 [PMCID: PMC2832485](#)
101. Yoon, J-H., Choi, E-J. and **R. Parker**. (2010) Dcp2 phosphorylation by Ste20 modulates stress granule assembly and mRNA decay in *Saccharomyces cerevisiae*. **Journal of Cell Biology** 189:813-827 [PMCID: PMC2878948](#)
102. Swisher K.D., and **R. Parker**. (2010) Localization to, and Effects of Pbp1, Pbp4, Lsm12, Dhh1, and Pab1 on Stress Granules in *Saccharomyces cerevisiae*. **PLOS ONE** 5:e10006 [PMCID: PMC2848848](#) doi:10.1371/journal.pone.0010006
103. Nissan, T., Rajyaguru, P., She, M., Song, H., and **R. Parker**. (2010) Decapping activators in *Saccharomyces cerevisiae* act by multiple mechanisms. **Molecular Cell** 39:773-783 [PMCID: PMC2946179](#)
104. Chen, L., Muhlrads, D., Hauryliuk, V., Cheng, Z., Lim, M.K., Shyp, V., **Parker, R.** and H. Song. (2010) Structure of the Dom34-Hbs1 complex and implications for no-go decay. **Nature Structural & Molecular Biology** 17:1233-1240 [PMCID: PMC3682582](#)
105. Hillebrand, J., Pan, K., Kokaram, A, Barbee, S., **Parker, R.**, and M. Ramaswami. (2010) The Me31B DEAD-box helicase localizes to postsynaptic foci and regulates expression of a CaMKII reporter mRNA in dendrites of *Drosophila* olfactory projection neurons. **Frontiers in Neural Circuits** [Internet] [cited 2010 Nov 12];4(121):1[14] doi: 10.3389/fncir.2010.00121 [PMCID: PMC3024558](#)
106. Chekulaeva, M., **Parker, R.**, and W. Fillipowicz. (2010) The GW/WG repeats of *Drosophila* GW182 function as effector motifs for miRNA-mediated repression. **Nucleic Acids Research** 38:6673-6683 [PMCID: PMC3965232](#)
107. Buchan, J.R., Yoon, J-H., and **R. Parker**. (2011) Stress-specific composition, assembly and kinetics of Stress granules in *Saccharomyces cerevisiae*. **Journal of Cell Science** 124:228-239 [PMCID: PMC3010191](#)
108. Balagopal, V., and **R. Parker**. (2011) Stm1 modulates translation after 80S formation in *Saccharomyces cerevisiae*. **RNA** 17:835-842 [PMCID: PMC3078733](#)
109. Hilliker, A., Gao, Z., Jankowsky, E., and **R. Parker**. (2011) The DEAD-box protein Ded1 modulates translation by the formation and resolution of an eIF4F-mRNA complex. **Molecular Cell** 43:962-972 [PMCID: PMC3268518](#)
110. McCann, C., Holohan E.E., Das, S., Dervan, A., Larkin, A., Lee, J.A., Rodrigues, V., **Parker, R.**, and M. Ramaswami. (2011) The Ataxin-2 protein is required for microRNA function and synapse-specific long-term olfactory habituation. **Proceeding of the National Academy of Science** 108: E655-662 [PMCID: PMC3169144](#)

### Original Research Papers (continued)

111. Chekulaeva, M., Mathys, H., Zipprich, J.T., Attig, J., Colic, M, **Parker, R.**, and W. Filipowicz. (2011) miRNA repression involves GW182-mediated recruitment of CCR4-NOT through conserved W-containing motifs. **Nature Structural & Molecular Biology** 18:1218-1226 [PMCID: PMC3885283](#)
112. Swisher, K. and **R. Parker.** (2011) Interactions between Upf1 and the decapping factors Edc3 and Pat1 in *Saccharomyces cerevisiae*. **PLOS ONE** 6: e26547 [PMCID: PMC3204985](#)
113. Rajyaguru, P., She, M., and **R. Parker.** (2012) Scd6 targets eIF-4G to repress translation: RGG-motif proteins as a class of 4G-binding proteins. **Molecular Cell** 45:244-254 [PMCID: PMC3277450](#)
114. Harigaya, Y. and **R. Parker.** (2012) Global analysis of mRNA decay intermediates in *Saccharomyces cerevisiae*. **Proceedings of the National Academy of Sciences** 109:11764-11769 [PMCID: PMC3406813](#)
115. **Parker, R.** (2012) Skill Development in Graduate Education. **Molecular Cell** 46:377-361 [PMCID: PMC3873173](#)
116. Luhtala, N. and **R. Parker.** (2012) Structure-function analysis of Rny1 in tRNA cleavage and growth inhibition. **PLOS ONE** 7:e41111. Epub 2012 Jul 19. [PMCID: PMC3400635](#)
117. Lai, T., Cho, H., Liu, Z., Bowler, M.W., Piao, S., **Parker, R.**, Kim, Y.K., and H. Song. (2012) Structural basis of PNRC2-mediated link between mRNA surveillance and decapping. **Structure** 20:2025-2037 [PMCID: PMC2323275](#)
118. Mitchell, S.F., Jain, S., She, M., and **R. Parker.** (2013) Global Analysis of Yeast mRNPs. **Nature Structural and Molecular Biology**, 20:127-133 [PMCID: PMC3537908](#)
119. Buchan, J.R., Kolaitis, R-M., Taylor, J.P, and **R. Parker.** (2013) Eukaryotic stress granules are cleared by granulophagy and Cdc48/VCP function. **Cell**, 153:1461-1474 [PMCID: PMC3760148](#)
120. Sudhakaran, I.P., Hillebrand, J., Dervan, A., Das, S., Holohan, E.e., Hülsmeier, J., Sarov, M., **Parker, R.**, Vijayraghavan, K., and M. Ramaswami. (2014) FMRP and Ataxin-2 function together in long-term olfactory habituation and neuronal translational control. **Proceedings of the National Academy of Science** 111(1):E99-E108. doi: 10.1073/pnas.1309543111. Epub 2013 Dec 16. [PMCID: PMC3890871](#)
121. Wu, D., Muhrad, D., Bowler, M.W., Liu, Z., **Parker, R.**, and H. Song. (2014) Lsm2 and Lsm3 bridge the interaction of the Lsm1-7 complex with Pat1 for decapping activation. **Cell Research**, 24:233-246 [PMCID: PMC3915908](#)
122. Walters, R.W., Shumilin, I.A., Yoon, J-H., Minor, W., and **R. Parker.** (2014) Edc3 function in yeast and mammals is modulated by interactin with NAD-related compounds. **G3 (Bethesda)** 4:613-622 [PMCID: PMC4059234](#)

### Original Research Papers (continued)

123. Decker, C.J. and **R. Parker**. (2014) Analysis of Double-Stranded RNA from Microbial Communities Identifies Double-Stranded RNA Virus-Like Elements. **Cell Reports** 7:898-906 [PMCID: PMC41117469](https://doi.org/10.1016/j.celrep.2014.07.025)
124. Shukla, S. and **R. Parker**. (2014) Quality control of assembly-defective U1 snRNAs by decapping and 5'-to-3' exonucleolytic digestion. **Proceedings of the National Academy of Science** 111(32): E3277–E3286 [PMCID: PMC4136611](https://doi.org/10.1073/pnas.1407811111)
125. Walters, R., Muhlrad, D., Garcia, J., and **R. Parker**. (2015) Differential effects of Ydj1 and Sis1 on Hsp70-mediated clearance of stress granules in *Saccharomyces cerevisiae*. **RNA** 21:1660-1671 [PMCID: PMC4536325](https://doi.org/10.1261/rna.045363.115)
126. Garcia, J.F. and R. Parker. (2015) MS2 coat proteins bound to yeast mRNAs block 5' to 3' degradation and trap mRNA decay products: implications for the localization of mRNAs by MS2-MCP system. **RNA** 8:1393-1395 [PMCID: PMC4509929](https://doi.org/10.1261/rna.045099.115)
127. Lin, Y., Protter, D.S.W., Rosen, M.K., and **R. Parker**. (2015) Formation and Maturation of Phase Separated Liquid Droplets by RNA Binding Proteins. **Molecular Cell** 60:208-219 [PMCID: PMC4609299](https://doi.org/10.1016/j.molcel.2015.07.010)
128. Lasda, E. and **R. Parker**. (2016) Circular RNAs co-precipitate with extracellular vesicles: A possible mechanism for circRNA clearance. **PLOS ONE** <https://doi.org/10.1371/journal.pone.0148407> [PMCID: PMC4743949](https://doi.org/10.1371/journal.pone.0148407)
129. Jain, S., Wheeler, J.R., Walters, R.W., Agrawal, A., Barsic, A., and **R. Parker**. (2016) ATPase-modulated stress granules contain a diverse proteome and substructure. **Cell** 164(3):487-498. DOI: [10.1016/j.cell.2015.12.038](https://doi.org/10.1016/j.cell.2015.12.038) [PMCID: PMC4733397](https://doi.org/10.1016/j.cell.2015.12.038)
130. Shukla, S., Schmidt, J.C., Goldfarb, K.C., Cech, T.R., and **R. Parker**. (2016) Inhibition of telomerase RNA decay rescues telomerase deficiency caused by dyskerin or PARN defects. **Nature Structural & Molecular Biology** 23:286-292. DOI: [10.1038/nsmb.3184](https://doi.org/10.1038/nsmb.3184) [PMCID: PMC4830462](https://doi.org/10.1038/nsmb.3184)
131. Garcia, J.F. and **R. Parker**. (2016) Ubiquitous accumulation of 3' mRNA decay fragments in *Saccharomyces cerevisiae* mRNAs with chromosomally integrated MS2 arrays. **RNA**, 22:657-659. <http://www.rnajournal.org/cgi/doi/10.1261/rna.056325.116>. [PMCID: PMC4836640](https://doi.org/10.1261/rna.056325.116)
132. Banani, S.F., Rice, A.M., Peeples, W., Lin, Y., Jain, S., **R. Parker**, and M.K. Rosen. (2016) Compositional control of phase-separated cellular bodies. **Cell**, 166:651-663 <https://doi.org/10.1016/j.cell.2016.06.010> [PMCID: PMC4967043](https://doi.org/10.1016/j.cell.2016.06.010)
133. Eshleman, N., Liu, G., McGrath, K., **Parker, R.**, and J.R. Buchan. (2016) Defects in THO/TREX-2 function cause accumulation of novel cytoplasmic mRNP granules that can be cleared by autophagy. **RNA** 22:1200-1214. <http://www.rnajournal.org/cgi/doi/10.1261/rna.057224.116> [PMCID: PMC4931113](https://doi.org/10.1261/rna.057224.116)

### Original Research Papers (continued)

134. Poornima, G., Shah, S., Vignesh, V., **Parker R.**, and Rajyaguru, P.I. (2016) Arginine methylation promotes translation repression activity of eIF4G-binding protein, Scd6. **Nucleic Acids Research** 44:9358-9368 <https://doi.org/10.1093/nar/gkw762> PMCID: PMC5100564
135. Wheeler, J.R., Matheny, T., Jain, S., Abrisch, and **R. Parker.** (2016) Distinct stages in stress granule assembly and disassembly. **eLife** Sep 7;5. pii: e18413. <https://doi.org/10.7554/eLife.18413.001> PMCID: PMC5024549
136. Harigaya, Y. and **R. Parker.** (2016) Codon optimality and mRNA decay. **Cell Research** 26:1269-1270 doi:10.1038/cr.2016.127 PMCID: PMC5143416
137. Harigaya, Y. and **R. Parker.** (2016) Analysis of the association between codon optimality and mRNA stability in *Schizosaccharomyces pombe*. **BMC Genomics** 17:895 <https://doi.org/10.1186/s12864-016-3237-6> PMCID: PMC5101800
138. Walters, R.W., Matheny, T., Mizoue, L.S., Rao, B.S., Muhlrads, D., and **R. Parker.** (2017) Identification of NAD<sup>+</sup> capped mRNAs in *Saccharomyces cerevisiae*. **Proceedings of the National Academy of Science.** 114:480-485. <https://doi.org/10.1073/pnas.1619369114> PMCID: PMC5255579
139. Wheeler, J.R., Jain, S., Khong A., and **R. Parker.** (2017) Isolation of yeast and mammalian stress granule cores. **Methods** 126:12-17 <https://doi.org/10.1016/j.ymeth.2017.04.020> PMCID: PMC5924690
140. Harigaya, Y. and **R. Parker.** (2017) The link between adjacent codon pairs and mRNA stability. **BMC Genomics** 18:364 doi: 10.1186/s12864-017-3749-8 PMCID: PMC5424319
141. Shukla, S. and **R. Parker.** (2017) PARN modulates Y RNA stability and its 3'-end formation. **Molecular and Cellular Biology** 37:1-22 doi:10.1128/MCB.00264-17 PMCID: PMC5615183
142. Rao, B.S. and **R. Parker.** (2017) Numerous interactions act redundantly to assemble a tunable size of P bodies in *Saccharomyces cerevisiae*. **Proceedings of the National Academy of Science** 114(45):E9569-E9578. <https://doi.org/10.1073/pnas.1712396114> PMCID: PMC5692575
143. Khong, A., Matheny, T., Jain, S., Mitchell, S.F., Wheeler, J.R., and **R. Parker.** (2017) The stress granule transcriptome reveals principles of mRNA accumulation in stress granules. **Molecular Cell** 68:808-820 <https://doi.org/10.1016/j.molcel.2017.10.015> PMCID: PMC5728175
144. Tutucci, E., Vera, M., Biswas, J., Garcia, J., **Parker, R.**, and R.H. Singer. (2018) An improved MS2 system for accurate reporting of the mRNA life cycle. **Nature Methods** 15(1):81-89. doi: 10.1038/nmeth.4502. Epub 2017 Nov 13.

### Original Research Papers (continued)

145. Protter, D.S.W., Rao, B.S., Van Treeck, B., Lin, Y., Mizoue, L., Rosen, M.K., and **R. Parker**. (2018) Intrinsically disordered regions can contribute promiscuous interactions to RNP granule assembly. **Cell Reports** 22(6):1401-1412  
<https://doi.org/10.1016/j.celrep.2018.01.036> PMID: PMC5824733
146. Khong, A., Jain, S., Matheny, T., Wheeler, J.R., and **R. Parker**. (2018) Isolation of mammalian stress granule cores for RNA-Seq analysis. **Methods** 137:49-54  
<https://doi.org/10.1016/j.ymeth.2017.11.012> PMID: PMC5866748
147. Van Treeck, B., Protter, D.S.W., Matheny, T., Khong, A., Link, C.D., and **R. Parker**. (2018) RNA self-assembly contributes to stress granule formation and defining the stress granule transcriptome. **Proceedings of the National Academy of Science** 115(11):2734-2739  
<https://doi.org/10.1073/pnas.1800038115> PMID: PMC5856561
148. Bakthavachalu, B., Huelsmeier, J., Sudhakaran, I.P., Hillebrand, J., Singh, A., Petrauskas, A., Thiagarajan, D., Sankaranarayanan, M., Mizoue, L., Anderson, E.N., Pandey, U.B., Ross, E., VijayRaghavan, K., **Parker, R.**, and M. Ramaswami. (2018) RNP-granule assembly via ataxin-2 disordered domains is required for long-term memory and neurodegeneration. **Neuron** 98(4):754-755  
<https://doi.org/10.1016/j.neuron.2018.04.032>
149. Moon, S.L., and **R. Parker**. (2018) EIF2B2 mutations in vanishing white matter disease hypersuppress translation and delay recovery during the integrated stress response. **RNA** 24(6):841-852. <http://www.rnajournal.org/cgi/doi/10.1261/rna.066563.118> PMID: PMC5959252
150. Braselmann, E., Wierzba, A.J., Polaski, J.T., Chromiński, M., Holmes, Z.E., Hung, S.-T., Batan, D., Wheeler, J.R., **Parker, R.**, Jimenez, R., Gryko, D., Batey, R.T., and A.E. Palmer. (2018) A multicolor riboswitch-based platform for imaging of RNA in live mammalian cells. **Nature Chemical Biology** 10:964-971  
<https://doi.org/10.1038/s41589-018-0103-7> PMID: PMC6143402
151. Moon, S.L., and **R. Parker**. (2018) Analysis of eIF2B bodies and their relationships with stress granules and P-bodies. **Scientific Reports** 8(1):12264  
<https://doi.org/10.1038/s41598-018-30805-y> PMID: PMC6095920
152. Vogler, T.O., Wheeler, J.R., Nguyen, E.D., Hughes, M.P., Britson, K.A., Lester, E., Rao, B., Betta, N.D., Whitney, O.N., Ewachiw, T.E., Gomes, E., Shorter, J., Lloyd, T.E., Eisenberg, D.S., Taylor, J.P., Johnson, A.M., Olwin, B.B., and **R. Parker** (2018) TDP-43 and RNA form amyloid-like myo-granules in regenerating muscle. **Nature** 563:508-513  
<https://doi.org/10.1038/s41586-018-0665-2>
153. Khong, A., and **R. Parker**. (2018) mRNP architecture in translating and stress conditions reveals an ordered pathway of mRNA compaction. **Journal of Cell Biology** Oct 15. pii: jcb.201806183. doi: 10.1083/jcb.201806183

### Original Research Papers (continued)

154. Moon, S.L., Morisaki, T., Khong, A., Lyon, K., **Parker, R.**, and T.J. Stasevich. (2019) Multicolor single-molecule tracking of mRNA interactions with RNP granules. **Nature Cell Biology** Jan 21. doi: 10.1038/s41556-018-0263-4. [Epub ahead of print]
155. Shukla, S., Bjerke, G.A., Muhrad, D., Yi, R., and **R. Parker**. (2019) The ribonuclease PARN controls the levels of specific miRNAs that contribute to p53 regulation. **Molecular Cell** (in press)
156. Fok, W.C., Shukla, S., Vessoni, A., Brenner, K.A., **Parker, R.**, Sturgeon, C.M., Batista, L.F.Z. (2019) Posttranscriptional modulation of TERC by PAPD5 inhibition rescues hematopoietic development in dyskeratosis congenita. **Blood** (submitted)
157. Tauber D. and **R. Parker**. (2019) The Neuroinflammatory Product Prostaglandin 15-d-PGJ2 Produces Stress Granules Dependent on P-eIF2 $\alpha$ . **Journal of Biological Chemistry** (submitted)

### BOOK CHAPTERS & INVITED REVIEWS

1. Heffron, F., Kostriken, R., Morita, C. and **R. Parker**. (1981) Tn3 encodes a site-specific recombination system: identification of essential sequences, genes, and the actual site of recombination. In: **Cold Spring Harbor Symposia on Quantitative Biology**, Vol. XLV, pp. 259-268.
2. Jones, E., Zubenko, G., **Parker, R.**, Hemmings, B. and A. Hasik. (1981) Pleiotropic mutations of *Saccharomyces cerevisiae* which cause deficiency for proteinases and other vacuole enzymes. In: **Molecular Genetics in Yeast, Alfred Benzon Symposium**, Vol. 16, (von Wettstein, D., Friis, J., Kielland-Brant, M., and Stenderup, A., Eds.), pp. 182-188.
3. Guthrie, C., Reidel, N., **Parker, R.**, Swerdlow, H. and B. Patterson. (1986) Genetic analyses of snRNAs and RNA processing in yeast. In: **Yeast Cell Biology, UCLA Symposia on Molecular Biology**, New Series, Vol. 33, pp. 301-321. New York: Alan R. Liss, Inc.
4. **Parker, R.** and B. Patterson. (1987) Architecture of fungal introns: implications for spliceosome assembly. In: **Molecular Biology of RNA: New Perspectives** (Inouye, M., and Dudock, B.S., Eds.), pp. 133-149. New York: Academic Press.
5. **Parker, R.** (1989) Genetic methods for identification and characterization of RNA-RNA and RNA-protein interactions. **Methods in Enzymology** 180:510-517.
6. Jacobson, A., Herrick, D., Donahue, J., **Parker, R.** and S. Peltz. (1990) Regulation of mRNA stability in yeast. Post-Transcriptional Control of Gene Expression. (McCarthy, J.E.G., Puitte, M. F., eds.) **NATO ASI Series**, H9:45-54.
7. **Parker, R.**, Herrick, D., Peltz, S. and A. Jacobson. (1991) Measurement of mRNA decay rates in *Saccharomyces cerevisiae*. **Methods in Enzymology** 194:415-423.



### Book Chapters & Invited Reviews (continued)

8. **Parker, R.**, Muhrad, D., Deshler, J., Taylor, N. and J. Rossi. (1992) Ribozymes: Principles and designs for their use as antisense and therapeutic agents. In: **Gene Regulation: Biology of Antisense RNA and DNA**. (R.P. Erickson and J. G. Izant, eds.), pp. 55-70. Raven Press, Ltd., New York.
9. Decker, C. and **R. Parker**. (1994) Mechanisms of mRNA degradation in eukaryotes. **Trends in Biochemical Sciences** 19:336-340.
10. Beelman, C. and **R. Parker**. (1995) Degradation of mRNA in Eukaryotes. **Cell** 81:179-183.
11. Decker, C.J. and **R. Parker**. (1995) Diversity of cytoplasmic functions for the 3' untranslated region of eukaryotic transcripts. **Current Opinion in Cell Biology** 7:386-392.
12. Caponigro, G. and **R. Parker**. (1996) Mechanisms and Control of mRNA Turnover in *Saccharomyces cerevisiae*. **Microbiological Reviews** 60:233-249. [PMCID: PMC239426](#)
13. Anderson, J.S.J. and **R. Parker**. (1996) RNA turnover: The helicase story unwinds. **Current Biology** 6:780-782.
14. LaGrandeur, T.E. and **R. Parker**. (1996) mRNA decapping activities and their biological roles. **Biochemie** 78:1049-1055.
15. Tharun, S. and **R. Parker**. (1997) Mechanisms of mRNA Turnover in Eukaryotic Cells. In: **mRNA Metabolism and Post-Transcriptional Gene Regulation**. (Morris, D. R. and Harford J. B., eds.), pp. 181-199. New York, Wiley-Liss, Inc.
16. He, W., and **R. Parker**. (1999) Analysis of mRNA Decay Pathway in *S. Cerevisiae*. **Methods** 17:3-10.
17. Tharun, S., and **R. Parker**. (1999) Turnover of mRNA in Eukaryotic Cells. In: **Comprehensive Natural Products Chemistry, Volume 6: Prebiotic Chemistry, Molecular Fossils, Nucleosides, and RNA**. (Barton, Derek H.R., Nakanishi, Koji, Meth-Cohn, Otto, eds.) pp. 205-216. Amsterdam, New York, Elsevier Science, Ltd.,
18. Hilleren, P., and **R. Parker**. (1999) mRNA Surveillance in Eukaryotes: Kinetic Proofreading of Proper Translation Termination as assessed by mRNP Domain Organization? **RNA** 5:711-719. [PMCID: PMC1369798](#)
19. van Hoof, A., and **R. Parker**. (1999) The exosome: A proteasome for RNA? **Cell** 99:347-350.
20. Hilleren, P., and **R. Parker**. (1999) Mechanisms of mRNA Surveillance in Eukaryotes. **Annual Review of Genetics** 3:229-260.
21. He, W., and **R. Parker**. (2000) Functions of Lsm proteins in mRNA degradation and splicing. **Current Opinion in Cell Biology** 12:346-350.

### Book Chapters & Invited Reviews (continued)

22. Tucker, M., and **R. Parker**. (2000) Mechanisms and Control of mRNA Decapping in *Saccharomyces cerevisiae*. **Annual Review of Biochemistry** 69:571-595.
23. Schwartz, D.C., and **R. Parker**. (2000) Interaction of mRNA Translation and mRNA Degradation in *Saccharomyces cerevisiae*. In: **Translational Control of Gene Expression**. (Sonenberg, N., Hershey, J.W.B, Matthews, M.B., eds.) pp. 807-825. New York, Cold Spring Harbor Laboratory Press. DOI: 10.1101/087969618.39.807
24. Dunckley, T., and **R. Parker**. (2001) Yeast mRNA Decapping Enzyme. **Methods in Enzymology** 342:226-233.
25. Dunckley, T., and **R. Parker**. (2001) RNA Turnover. In: **Encyclopedia of Genetics**. (Brenner, S., Miller J.H., eds.) Academic Press, NY, p1748-1751. doi: 10.1006/rwgn.2001.1138
26. Wickens, M., Bernstein, D.S., Kimble, J., and **R. Parker**. (2002) A PUF family portrait: 3' UTR regulation as a way of life. **Trends in Genetics** 18:150-157.
27. van Hoof, A., and **R. Parker**. (2002) Messenger RNA degradation: Beginning at the end. **Current Biology** 12:R285-R287.
28. Steiger, M., and **R. Parker**. (2002) Analyzing mRNA Decay in *Saccharomyces cerevisiae* **Methods in Enzymology** 351:648-660.
29. Decker, C.J. and **R. Parker**. (2002) mRNA decay enzymes: Decappers conserved between yeast and mammals. **Proceeding of the National Academy of Science** 99:12512-12514. [PMCID: PMC130488](#)
30. **Parker, R.** and H. Song. (2004) The Enzymes and Control of Eukaryotic mRNA Turnover. **Nature Structural and Molecular Biology** 11:121-127.
31. Collier, J. and **R. Parker**. (2004) Eukaryotic mRNA decapping. **Annual Review of Biochemistry** 73:861-890.
32. Baker, K.E., and **R. Parker**. (2004) Nonsense-mediated mRNA decay: terminating erroneous gene expression. **Current Opinion Cell Biology** 16:293-299.
33. Baker, K.E. and **R. Parker**. (2006) Features of nonsense-mediated mRNA decay in *Saccharomyces cerevisiae*. In: **Nonsense-mediated mRNA Decay**. (Maquat, L., ed.) pp 3-13. Landes Biosciences, Texas.
34. Valencia-Sanchez, M., Liu, J., Hannon, G.J. and **R. Parker**. (2006) Control of translation and mRNA degradation by miRNAs and siRNAs. **Genes & Development** 20:515-524.
35. Decker, C.J. and **R. Parker**. (2006) CAR-1 and trailer hitch: Driving mRNP granule function at the ER? **Journal of Cell Biology** 173:159-163. [PMCID: PMC2063806](#)

### Book Chapters & Invited Reviews (continued)

36. Doma, M.K., and **R. Parker**. (2006) Revenge of the NRD: preferential degradation of nonfunctional eukaryotic rRNA. **Developmental Cell** 11:757-758.
37. **Parker, R.** and U. Sheth. (2007) P Bodies and the Control of mRNA Translation and Degradation. **Molecular Cell** 25:635-646.
38. Doma, M.K. and **R. Parker**. (2007) RNA Quality Control in Eukaryotes. **Cell** 131:660-668.
39. Buchan, J.R. and **R. Parker**. (2007) Molecular Biology: The Two Faces of miRNA. **Science** 318:1877-1878.
40. Beckham, C.J. and **R. Parker**. (2008) P Bodies, Stress Granules, and Viral Life Cycles. **Cell Host & Microbe** 3:206-212. [PMCID: PMC2396818](#)
41. Hilliker, A., and **R. Parker**. (2008) "Stressed out? Make some modifications!" **Nature Cell Biology** 10:1129-1130. [PMCID: PMC2803088](#)
42. Nissan, T. and **R. Parker**. (2008) Analyzing P-bodies in *Saccharomyces cerevisiae*. **Methods in Enzymology** 448:507-520. [PMCID: PMC2693489](#)
43. Passos, D.O. and **R. Parker**. (2008) Analysis of Cytoplasmic mRNA Decay in *Saccharomyces cerevisiae*. **Methods in Enzymology** 448:409-427. [PMCID: PMC2819139](#)
44. Rajyaguru, P. and **R. Parker**. (2009) Cgh-1 and the Control of Maternal mRNAs. **Trends in Cell Biology** January 19, 19:24-28.
45. Balagopal, V. and **R. Parker**. (2009) Polysomes, P bodies and stress granules: states and fates of eukaryotic mRNAs. **Current Opinion in Cell Biology** 21:403-408. [PMCID: PMC2740377](#)
46. Swisher, K.D. and **R. Parker**. (2009) Related Mechanisms for mRNA and rRNA Quality Control. **Molecular Cell** May 29, 34:401-402.
47. Thompson, D.M. and **R. Parker**. (2009) Stressing out over tRNA cleavage. **Cell** July 24, 138:215-219.
48. Buchan, J.R. and **R. Parker**. (2009) Eukaryotic stress granules: the ins and outs of translation. **Molecular Cell** 36:932-41 [PMCID: PMC2813218](#)
49. J. Ross Buchan, Tracy Nissan, and **R. Parker**. (2010) Analyzing P-Bodies and Stress Granules in *Saccharomyces cerevisiae*. **Methods in Enzymology** 470:619-640.
50. Yoon, J-H. and **R. Parker**. (2010) Coil-in-to snRNP assembly and Cajal bodies. **Nature Structural & Molecular Biology** 17:391-393 doi: 10.1038/nsmb0410-391

### Book Chapters & Invited Reviews (continued)

51. Luhtala, N. and **R. Parker**. (2010) T2 Family ribonucleases: ancient enzymes with diverse roles. **Trends in Biochemical Sciences** 35:253-259 PMCID: PMC2888479
52. Harigaya, Y. and **R. Parker**. (2010) No-Go Decay: a quality control mechanism for RNA in translation. **WIREs RNA**, Wiley Interdisciplinary Reviews: RNA, 1:132-141 DOI:10.1002/wrna.17
53. **Parker, R.** (2012) RNA Degradation in *Saccharomyces cerevisiae*. **Genetics** 191:671-702 doi: 10.1534/genetics.111.137265
54. Buchan, J.R., Capaldi, A.P. and **R. Parker**. (2012) TOR-tured Yeast Find a New Way to Stand the Heat. **Molecular Cell** 47:155-157 doi: 10.1016/j.molcel.2012.07.005
55. Decker, C.J. and **R. Parker**. (2012) P-Bodies and Stress Granules: Possible Roles in the Control of Translation and mRNA Degradation. **Cold Spring Harbor Perspectives in Biology** Sep 1;4(9):a012286. doi: 10.1101/cshperspect.a012286 PMCID: PMC3428773
56. Rajyaguru, P. and **R. Parker**. (2012) RGG motif proteins: Modulators of mRNA functional states. **Cell Cycle** 11:2594-2599. PMCID: PMC3873214
57. Jain, S., and **R. Parker**. (2013) The discovery and analysis of P Bodies. **Advances in experimental medicine and biology** 768:23-43. doi: 10.1007/978-1-4614-5107-5\_3
58. Ramaswami, M., Taylor J.P., and **R. Parker**. (2013) Altered "Ribostasis": RNA-protein granule formation or persistence in the development of degenerative disorders. **Cell** 154:727-736 PMCID: PMC3811119
59. Gilbert, J., Ball, M., Blainey, P., Blaser, M., Bohannon, B., Bunge, J., Dominguez, M.G., Epstein, S., Fierer, N., Gevers, D., Grikscheit, T., Hamdan, L., Harvey, J., Huttenhower, C., Kirkup, B., Kong, H., Lauber, C., Lemon, K., Lych, S., Martin, L. Mello, C., Palma, J., **Parker, R.**, Petrosino, J., Segre, J., Voshall, L., Yi, R. and R. Knight. (2014) Meeting Report for the 1st Skin Microbiota Workshop, Boulder, CO October 15-16 2012. **Standards in Genomic Sciences** 9:13:1-7. DOI: 10.1186/1944-3277-9-13 <http://www.standardsingenomics.com/content/9/1/13> PMCID: PMC4334105
60. Walters, R. and **R. Parker**. (2014) Quality Control: Is there Quality Control of Localized mRNAs? **Journal of Cell Biology** 204:863-868 DOI: 10.1083/jcb.201401059
61. Mitchell, S.F. and **R. Parker**. (2014) Principles and Properties of Eukaryotic mRNPs. **Molecular Cell** 54:547-558
62. Harigaya, Y. and **R. Parker**. (2014) Fragile X Mental Retardation Protein and the Ribosome. **Molecular Cell** 53:330-332
63. Lasda, E.L. and **R. Parker**. (2014) Circular RNAs: Diversity of Form and Function. **RNA** 20:1829-1842 PMCID: PMC4238349

### Book Chapters & Invited Reviews (continued)

64. Schwartz, J.C., Cech, T.R., and **R. Parker**. (2015) Biochemical Properties and Biological functions of FET Proteins. **Annual Review of Biochemistry** 84:355-379. doi: 10.1146/annurev-biochem-060614-034325. Epub 2014 Dec 8.
65. Mitchell, S.F. and **R. Parker**. (2015) In vivo crosslinking followed by polyA enrichment to identify yeast mRNA binding proteins. In: **RNA Remodeling Proteins: Methods in Molecular Biology**. 1259:35-47 (Boudvillain, M. ed.) Springer New York
66. Walters, R.W. and **R. Parker**. (2015) Coupling of Ribostasis and Proteostasis: Hsp70 proteins in mRNA metabolism. **Trends in Biochemical Sciences** 40:552-559. PMCID: PMC4584423
67. Mitchell, S.F. and **R. Parker**. (2015) Modifications on translation initiation. **Cell** 163:796-798. doi: [10.1016/j.cell.2015.10.056](https://doi.org/10.1016/j.cell.2015.10.056)
68. Mitchell, S.F. and **R. Parker**. (2016) Identification of endogenous mRNA-binding proteins in yeast using crosslinking and polyA enrichment. In: **Methods in Molecular Biology, RNA-Protein Complexes and Interactions: Methods and Protocols**. (Lin, R-J., ed.) Humana Press, USA, a part of Springer Sciences 1421:153-163 doi: 10.1007/978-1-4939-3591-8\_13.
69. Protter, D.S.W., and **R. Parker**. (2016) Principles and properties of stress granules. **Trends in Cell Biology** 26:668-679. <https://doi.org/10.1016/j.tcb.2016.05.004> PMCID: PMC4993645
70. Shukla, S., and **R. Parker** (2016) Hypo- and Hyper- assembly diseases of RNA-protein complexes. **Trends in Molecular Medicine** 22:615-628. <https://doi.org/10.1016/j.molmed.2016.05.005> PMCID: PMC4925306
71. Moon, S.L., Sonenberg, N., and **R. Parker**. (2018) Neuronal regulation of eIF2 $\alpha$  function in health and neurological disorders. **Trends in Molecular Medicine** 24(6):575-589. <https://doi.org/10.1016/j.molmed.2018.04.001>
72. Van Treeck, B., and **R. Parker**. (2018) Emerging Roles for Intermolecular RNA-RNA Interactions in RNP Assemblies. **Cell** 174(4):791-802. <https://doi.org/10.1016/j.cell.2018.07.023> PMCID: PMC6200146
73. Mittag, T., and **R. Parker**. (2018) Multiple modes of protein-protein interactions promote RNP granule assembly. **Journal of Molecular Biology** 430(23):4636-4649. <https://doi.org/10.1016/j.jmb.2018.08.005> PMCID: PMC6204294
74. Lester, E., and **R. Parker**. (2018) The Tau of Nuclear-Cytoplasmic Transport. **Neuron** 99(5):869-871. <https://doi.org/10.1016/j.neuron.2018.08.026>
75. Van Treeck, B., and **R. Parker**. (2018) Principles of stress granules revealed by imaging approaches. **Cold Spring Harbor Perspectives in Biology** (in press)