EXHIBIT 1

CURRICULUM VITAE

PART I: General Information

Name: **Jeffrey D. Parvin**

Office Address: The Ohio State University
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email: Jeffrey.Parvin@osumc.edu

Place of Birth: Orange, New Jersey (Citizen of USA)

Education:

1978-1982:	B.S.	Haverford College, Haverford, PA (Chemistry)
1982-1987:	Ph.D.	Mount Sinai School of Medicine, New York, NY (Microbiology)
1982-1989:	M.D.	Mount Sinai School of Medicine

Postdoctoral Training:

1989-1994 Postdoctoral Research Fellow in Biology, Center for Cancer Research, Massachusetts Institute of Technology (Dr. Phillip A. Sharp, supervisor), Cambridge, MA

Academic Appointments:

1995-2000:	Assistant Professor of Pathology, Harvard Medical School
2001-2007:	Associate Professor of Pathology, Harvard Medical School
2007-present:	Professor, Department of Biomedical Informatics, The Ohio State University
2007-present:	Louis Levy Professor for Cancer, The Ohio State University
2008-present:	Interim-Chair, Department of Biomedical Informatics, The Ohio State University
2008-present:	Adjunct Professor, Department of Molecular Virology, Immunology and Medical Genetics, The Ohio State University
2008-present:	Director, Biomedical Informatics Shared Resource of the OSUCCC

Hospital Appointment:

1995-2007 Research Pathologist, Brigham and Women's Hospital

Major Committee Assignments:

1997	Pathology Search Committee for Assistant Professor, Mass. Gen. Hospital, Harvard Medical School
1997-1999	Study Section, Breast Cancer Res. Program, Department of Defense
1999-2003	Reviewer of grant applications to Susan G. Komen Breast Cancer Foundation
1999	Member, Special Study Section, NCI, to review a program project grant application
1999-2006	Program advisor for BBS program students, Harvard Medical School
2002-2003	Study Section, Breast Cancer Res. Program, Department of Defense
2003	Member, Special Study Section, NCI, to review a program project grant application
2003	Member, 2004 AACR Program Committee
2004-2005	Pathology Search Committee for Assistant Professor, Harvard Medical School
2005	Molecular and Cellular Oncology division search committee, Dana-Farber Cancer Institute
2005-2006	NIH MGB study section (ad hoc)
2005	NIH/ Genetic Sciences NRSA review (ad hoc)
2007-present	Executive committee, Department of Biomedical Informatics
2007-present	Appointments, promotion, and tenure committee, Department of Biomedical Informatics
2008	Era of Hope grant review
2008-2009	NIH MGB study section (ad hoc)
2008-2009	Co-chair, OSUMC Information Enterprise Advisory Board
2008-2009	Co-Executive Director, Center for IT Innovation in Health Care
2009-present	Co-director, Pelotonia Training Program in Cancer Research

Ad hoc grant reviews, not on a committee:

1999	Ad hoc reviewer for American Cancer Society
1999 of	Reviewer for the Scientific Advisory Board for the Joint Infrastructure Fund The Wellcome Trust (ad hoc)
2002-2003	Reviewer of grants for the Koningin Wilhelmina Fonds of the Nederlandse Kankerbestrijding (ad hoc)
2003-2006	Reviewer of grants for the Israel Science Foundation (ad hoc)
2005-2009	Reviewer of grants for the Breast Cancer Campaign (UK) (ad hoc)
2006	Reviewer for Ohio Cancer Research Associates (ad hoc)
2006	Reviewer of CAREER grants for NSF
2006-2009	Reviewer of grants for Cancer Research UK
2009	Reviewer of grants for Texas Norman Hackerman Advanced Research Program
2009	Reviewer of grants for the Icelandic Research Fund

Professional society memberships

American Society for Investigative Pathologists
American Association for Cancer Research
American Society for Microbiology

Editorial Boards:

2001-present	Associate Editor	Cancer Biology and Therapy
2009-present	Editorial Board Member	International Journal of Biological Sciences
ad hoc reviewer:		EMBO Journal
		Molecular and Cellular Biology
		Proc. Natl. Acad. Sci. U S A
		Science
		Genomics
		Nature Genetics
		Oncogene
		Cancer Research
		Biochemistry
		Journal of Biological Chemistry
		Cell Growth & Differentiation
		The Amer. J. of Pathology
		Clinical Cancer Research
		Nature Reviews Mol. Cell Biology
		Experimental Cell Research
		Molecular Cell
		Cancer Cell
		Molecular Biology of the Cell
		Molecular Cancer Research
		British Journal of Cancer
		Leukemia Research
		Clinical Cancer Research
		Nucleic Acids Research
		Nature Reviews Cancer
		Breast Cancer Research & Treatment
		Cell Cycle
		Nature Reviews Molecular and Cellular Biology
		Molecular Cancer

Awards and honors:

1981	Phi Beta Kappa Honor Society (Haverford College)
1982	George Pierce Prize in Chemistry (Haverford College)
1982	Honors in Chemistry (Haverford College)
1986	First place, NYC Branch of the American Society for Microbiology Graduate Student Research Presentation Competition
1986-1987	Alumni Dissertation Fellowship from the City University of New York
1986-1987	American Society for Microbiology, NYC Branch, Grad. Student Scholarship
1989	Basic Sciences Achievement Award, Mount Sinai School of Medicine
1989-1992	Postdoctoral Fellowship, The Irvington Institute for Medical Research
1992-1994	Special Fellow, Leukemia Society of America
1996-1998	Junior Faculty Research Award, American Cancer Society

2003 Mentoring Award, Program in Biology and Biological Sciences, Harvard Medical School

Part II: Research, Teaching, and Clinical Contributions

Major Research Interests: Systems Biology Methods for Discovery of Genes Involved in Breast Cancer

1. Nuclear function of the breast cancer specific tumor suppressor protein, BRCA1. We discovered that the BRCA1 protein is in the transcription regulatory complex known as the RNA polymerase II holoenzyme. We discovered that in the transcription initiation reaction, the BRCA1/BARD1 E3 ubiquitin ligase conjugates ubiquitin to RNA polymerase II and consequently blocks the addition of TFIIE and TFIIH to the initiation complex. This biochemical reaction reconstituted one key aspect of BRCA1 biology: it functions as a transcriptional repressor. We also discovered the mechanism by which BRCA1 can have the opposite effect and function as a coactivator of transcription. In new experiments we are studying the mechanism of BRCA1 function in the control of homology directed recombination repair of DNA damage. We have a robust system for mapping BRCA1 protein domains to function in DNA repair.
2. Centrosome function, breast cancer, and BRCA1. We have discovered that BRCA1 function in breast cells is critical for maintaining centrosome number and function. One striking aspect of these experiments is that in the human cell lines tested, the requirement for BRCA1 to maintain centrosomes was breast specific. We found that the ubiquitination activity of the BRCA1/BARD1 heterodimer mediates the regulation in vivo and in vitro, and we have established an in vitro centrosome assay regulated by BRCA1 ubiquitin ligase activity. Importantly, the centrosome assay and the transcription assay (described above) are the only published in vitro functional assays regulated by the BRCA1-dependent ubiquitin ligase activity.
3. Systems biology approaches for the discovery of genes important in breast cancer. We have found that by analyzing publicly available microarray data we are able to identify genes that are strong candidates for breast cancer genes. We identify genes that have mRNA levels correlated with those of BRCA1 and BRCA2. Using this approach, we have developed a new framework of: 1.) using informatics methods to identify candidate "BRCA" genes; 2.) validation of the candidate BRCA gene in the laboratory using RNA interference and cell-based assays regulated by BRCA1 and BRCA2; and 3.) testing the gene using antibody-based assays of clinical samples from breast cancer and other cancer cases. We envision that this experimental paradigm can be applied to other diseases.
4. Identification of ubiquitin conjugates after DNA damage. We have developed two technological approaches to the identification of proteins that become ubiquitin modified following DNA damage. The first is using a doubly-tagged ubiquitin-expressing cell line, which enables us to purify the ubiquitinated proteins following DNA damage, and we use several methods to compare undamaged to damaged samples. The second approach is in development, and will allow us to purify ubiquitinated proteins and the identification of the ubiquitinated side chain on the protein using untagged cells. This latter technology, when fully developed, will enable the study of ubiquitination changes in primary cells taken from patients.

Research Funding:

1996	American Cancer Society, Massachusetts Division, Research Grant Principal investigator Title: Regulation of gene activation by retroviral Tat and oncoproteins
1996-1998	American Cancer Society Junior Faculty Research Award Principal investigator Title: Transcription regulation by helicases and co-activators
1996-2007	National Institutes of Health, RO1 research grant Principal investigator Title: RNA polymerase II holoenzyme
1998	Massachusetts Dept. of Public Health, Breast Cancer Research Program Principal investigator Title: Identification of genes regulated by BRCA1
1999-2001	American Cancer Society Research Project Grant Principal investigator Title: Identification of BRCA1 function
1999-2001	Concert for the Cure Principal investigator Title: Biochemical Analysis of BRCA1 protein
2000-2001	Elsa U. Pardee Foundation Principal investigator Title: Functional analysis of BRCA1
2001-2003	Massachusetts Dept. of Public Health, Prostate Cancer Research Program Principal investigator Title: Tumor suppressor p53 function in prostate cancer
2002	American Cancer Society Research Scholar Grant Principal investigator Title: BRCA1 function
2002-2008	National Institutes of Health, RO1 research grant Principal investigator Title: BRCA1 function
2006-2011	National Institutes of Health, RO1 research grant Principal investigator Title: Centrosomes and BRCA1

2008-2009	National Cancer Institute, OSUCCC cancer center support grant Co-Investigator (Director of Biomedical Informatics Shared Resource)
2008-2009	National Cancer Institute, U54 Center Award (T. Huang, PI) Co-Investigator Title: Interrogating epigenetic changes in cancer genomes
2008-2012	National Center for Research Resources (R. Jackson, PI) Co-Investigator Title: The Ohio State University Center for Clinical and Translational Science
2009-2014	National Cancer Institute, R01 research grant Principal investigator (multi-PI: Catalyurek, Huang, and Parvin) Title: Informatics methods for identifying breast cancer control genes and proteins

Teaching activities:

1. Harvard Medical School

1995	Harvard Medical School course "Identity, microbes and defense" Administered oral examinations 10 medical students 3 hours of preparation, 1 four hour session
1996-1998	HMS Genetics 330: "Critical thinking and research proposal writing" small group leader 4 BBS graduate students each year 4 hours preparation per session, 8 two hour sessions total
1998-2002	HMS BCMP 200: "Molecular Biology" Discussion leader rotating groups of 10 students 4 hours preparation per session, 8 X 1.5 hour sessions
1999-2001	Micro 230: "Analysis of the Biological Literature" Discussion leader Groups of 10 students 4 to 8 hours preparation per session, 10 X 3 hour sessions
1999-2005	IN714.0 HMS Pathology Course laboratory instructor 4 week course, 7 X 1.5 hour laboratory sessions assisting about 30 students 2 hours preparation per session
2002-2005	Micro 230: "Analysis of the Biological Literature"

Course Director and Discussion leader
Course for 70 students, groups of 10 students
As course director, I recruit faculty instructors and organize course material
About 120 hours preparation time, 30 hours of class time, per semester

2. Advisees and trainees:

1995-1998: Stephen F. Anderson, Ph.D., postdoctoral fellow
current position: Senior Scientist, Biology, NeoGenesis Drug Discovery, Inc.

1997: Andrew S. Neish, M.D., postdoctoral fellow
current position: Associate Professor of Pathology, Emory University

1997-1998: Dawit Haile, graduate student (Harvard Univ. Faculty of Arts and Sciences)
current position: Medical student, Mayo Clinic Medical School

1997-2002: Brian P. Schlegel, Ph.D., postdoctoral fellow
current position: Assistant Professor of Pathology, University of Illinois in Chicago

1998: Eric S. Silverman, M.D., postdoctoral fellow
current position: Instructor, Pulmonary Division, Brigham and Women's Hospital

1998-1999: Saima Sharif, M.D., postdoctoral fellow
current position: Resident in medicine, Salem Hospital, Salem, MA

1999-2002: Natsuko Chiba, M.D., Ph.D., postdoctoral fellow
current position: Associate Professor, Tohoku University, Sendai, Japan

1999-2003: Neelima Mondal, Ph.D., postdoctoral fellow
current position: Assistant Professor, School of Life Sciences, Jawaharlal Nehru University, New Delhi, India

2000-2006: Amanda M. Simons, Ph.D., graduate student
current position: Assistant Professor, Framingham State College, Framingham, MA

2000-2003: Fanglei You, M.D., Ph.D., postdoctoral fellow
current position: Postdoctoral fellow, Dana-Farber Cancer Institute, Boston, MA

2001-2005: Lea Starita, Ph.D., graduate student
current position: postdoctoral fellow, University of Washington, Seattle, WA

2002-2003: Ye Zhang, M.D., Ph.D., postdoctoral fellow
current position: Assistant Professor, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing China

2003-2007: Satish Sankaran, Ph.D., postdoctoral fellow
current position: postdoctoral fellow, Massachusetts General Hospital Cancer Center

2003-2004: Mothe Sreedhar Reddy, Ph.D., postdoctoral fellow. Deceased.

2003-2005: David Takeda, Ph.D., M.D., graduate student (co-supervise with Anindya Dutta)
current position: residency at Brigham and Women's Hospital

2003-2005: Woo-Hyun Park, Ph.D.
current position: Assistant Professor, Medical School of JeonBuk National University, Korea

2003-2006: Andrew Horwitz, Ph.D., graduate student
current position: postdoctoral fellow, University of California, San Francisco

2006-2008: Ekaterina Lamber, Ph.D., postdoctoral fellow
current position: postdoctoral fellow, The Institute for Cancer Research and Royal Marsden Hospital Foundation Trust

2006-2009: George F. Heine, Ph.D., postdoctoral fellow
current position: postdoctoral fellow, OSU
2007-present: Shweta Kotian, graduate student
2008-present: Zeina Kais, graduate student
2008-present: Mansi Arora, graduate student
2009-present: Yiheng Hu, graduate student
2009-present: Huiwen Liu, graduate student

3. Other teaching activities

1987, 1989 Influenza virus replication in graduate school course in "Animal Virology" at Mount Sinai School of Medicine
20 graduate students; 10 hours preparation for lecture and exam grading

Community service

1999-2004 Director of Brigham and Women's Hospital Pathology Department Research Seminar Series

2000 Spokesman for American Cancer Society at "Relay for Life" fund raising event, West Roxbury, MA
Spokesman for American Cancer Society at fundraising event, Ipswich, MA
Guest Speaker, American Cancer Society North Central Massachusetts Unit, Annual Board of Directors Meeting

2001-2002 Committee member organizing "Seminars in Molecular Medicine"

2002 Guest Speaker, American Cancer Society, Boston fundraising event
Guest Speaker, Fleet Bank, Women's Interests Network

Presentations at international conferences

1991 Cold Spring Harbor, NY; "Mechanisms of Eukaryotic Transcription"

1993 Cold Spring Harbor, NY; "Mechanisms of Eukaryotic Transcription"

1998 Helsinki, Finland; "Transcriptional Regulation"

1999 Redwood City, CA; "Gene Therapy and Molecular Biology & Medicine International Conference"
Cambridge, UK; "Second International Workshop on the Function of BRCA1 and BRCA2"

2000 Ventura, CA; invited speaker, Gordon Research Conference, "Cancer Genetics and Epigenetics"

New York, NY; invited speaker, "Genetic and Molecular Basis of Breast Cancer"

2001 Rockville, MD; invited speaker, "BRCA1: Function in Cell Growth and Tumorigenesis"

2002 Helsinki, Finland, invited speaker, 20th Sigrid Jusélius International Symposium: "Molecular Genesis of Cancer"

2003 San Diego, CA; FASEB meeting, chaired and presented at an ASIP "Pathobiology for Basic Scientists: Growth and Development" course

2004 Orlando, FL; AACR annual meeting, session chair and invited speaker: "Transcriptional control of cell survival".
Cambridge, MA; Sixteenth Annual Fanconi Anemia Research Fund Scientific Symposium.

2005 Cold Spring Harbor, NY; "The ubiquitin family"
Fukushima Japan, invited speaker; 11th annual meeting of the Japanese Society for familial tumors.
Heidelberg, Germany, invited speaker; EMBO Workshop on Centrosomes and Spindle Pole Bodies

2006 Orlando, FL; AACR special conference: "Ubiquitin and Cancer: From Molecular Targets and Mechanisms to the Clinic"

2007 Chaired and organized "Cellular Response to DNA Damage"; one day symposium sponsored by Abcam, held in Boston, MA

Invited seminars:

1998 Vertex Pharmaceuticals, Cambridge, MA
Harvard Medical School Department of Pathology research retreat

1999 Emory University, Department of Pathology, Atlanta, GA
Boston University School of Medicine, Boston, MA
Beth Israel Hospital, Boston, MA
Breast Cancer Prog. of the Dana Farber Harvard Cancer Center, Boston, MA

2000 Massachusetts General Hospital Cancer Center, Charlestown, MA

2001 University of Virginia, Department of Biochemistry and Molecular Genetics, Charlottesville, VA

2002	BCMP Minisymposium: The Biochemistry of Eukaryotic Transcription at Harvard Medical School University of Massachusetts Medical School, Worcester, MA Harvard Medical School, Department of Pathology Praecis Pharmaceuticals, Waltham, MA
2003	Harvard Medical School Department of Pathology research retreat Mt. Sinai School of Medicine, Department of Microbiology
2004	Boston Area DNA Repair and Mutagenesis group Mayo Clinic, Rochester, MN
2005	University of Pennsylvania Medical School, Philadelphia, PA University of Tohoku, Sendai, Japan (A medal was awarded with the seminar.) Boston Area Gene Expression Meeting Merck Research Laboratories, Boston, MA University of Pittsburgh School of Medicine, Pittsburgh, PA (Featured speaker in minisymposium) Harvard School of Public Health, Boston, MA
2006	University of Massachusetts Medical School, Worcester, MA Genzyme, Waltham, MA Ohio State University, Columbus, OH Karmanos Cancer Institute, Detroit, MI University of Kansas Cancer Center, Kansas City, KS Brown University, Providence, RI Case Comprehensive Cancer Center, Cleveland, OH Worcester Polytechnic Institute, Worcester, MA
2007	University of Wyoming, Laramie, WY Johnson & Johnson, Raritan, NJ
2009	Ohio University, Athens, Ohio OCCBIO 2009, Cleveland, Ohio

Part III
BIBLIOGRAPHY:

Original Reports

1. **Parvin JD**, Young J, Palese P. Nonsense mutations affecting the lengths of the NS1 nonstructural proteins of influenza A virus isolates. **Virology** 1983; 128: 512-7.

2. **Parvin JD**, Wang LH. Mechanisms for the generation of *src*-deletion mutants and recovered sarcoma viruses: identification of viral sequences involved in *src* deletions and in recombination with c-src sequences. **Virology** 1984; 138: 236-45.

3. Boyer KM, Papierniak CK, Gadzala CA, **Parvin JD**, Gotoff SP. Transplacental passage of IgG antibody to group B streptococcus serotype Ia. **J Pediatr** 1984; 104: 618-20.

4. **Parvin JD**, Moscona A, Pan WT, Leider JM, Palese P. Measurement of the mutation rates of animal viruses: influenza A virus and poliovirus type 1. **J Virol** 1986; 59: 377-83.

5. **Parvin JD**, Smith FI, Palese P. Rapid RNA sequencing using double-stranded template DNA, SP6 polymerase, and 3'-deoxynucleotide triphosphates. **DNA** 1986; 5: 167-71.

6. Buonagurio DA, Nakada S, **Parvin JD**, Krystal M, Palese P, Fitch WM. Evolution of human influenza A viruses over 50 years: rapid, uniform rate of change in NS gene. **Science** 1986; 232: 980-2.

7. Smith FI, **Parvin JD**, Palese P. Detection of single base substitutions in influenza virus RNA molecules by denaturing gradient gel electrophoresis of RNA-RNA or DNA-RNA heteroduplexes. **Virology** 1986; 150: 55-64.

8. Hsu MT, **Parvin JD**, Gupta S, Krystal M, Palese P. Genomic RNAs of influenza viruses are held in a circular conformation in virions and in infected cells by a terminal panhandle. **Proc Natl Acad Sci U S A** 1987; 84: 8140-4.

9. **Parvin JD**, Palese P, Honda A, Ishihama A, Krystal M. Promoter analysis of influenza virus RNA polymerase. **J Virol** 1989; 63: 5142-52.

10. Luytjes W, Krystal M, Enami M, **Parvin JD**, Palese P. Amplification, expression, and packaging of foreign gene by influenza virus. **Cell** 1989; 59: 1107-13.

11. **Parvin JD**, Sharp PA. Identification of novel factors which bind specifically to the core promoter of the immunoglobulin heavy chain gene. **J Biol Chem** 1991; 266: 22878-86.

12. **Parvin JD**, Timmers HT, Sharp PA. Promoter specificity of basal transcription factors. **Cell** 1992; 68: 1135-44.

13. **Parvin JD**, Sharp PA. DNA topology and a minimal set of basal factors for transcription by RNA polymerase II. **Cell** 1993; 73: 533-40.

14. **Parvin JD**, Shykind BM, Meyers RE, Kim J, Sharp PA. Multiple sets of basal factors initiate transcription by RNA polymerase II. **J Biol Chem** 1994; 269: 18414-21.

15. Aird WC, **Parvin JD**, Sharp PA, Rosenberg RD. The interaction of GATA-binding proteins and basal transcription factors with GATA box-containing core promoters. A model of tissue-specific gene expression. **J Biol Chem** 1994; 269: 883-9.

16. **Parvin JD**, McCormick RJ, Sharp PA, Fisher DE. Pre-bending of a promoter sequence enhances affinity for the TATA-binding factor. **Nature** 1995; 373: 724-7.

17. Makela TP, **Parvin JD**, Kim J, Huber LJ, Sharp PA, Weinberg RA. A kinase-deficient transcription factor TFIIH is functional in basal and activated transcription. **Proc Natl Acad Sci U S A** 1995; 92: 5174-8.

18. Chao DM, Gadbois EL, Murray PJ, Anderson SF, Sonu MS, **Parvin JD**, Young RA. A mammalian SRB protein associated with an RNA polymerase II holoenzyme. **Nature** 1996; 380: 82-5.

19. Kim J, **Parvin JD**, Shykind BM, Sharp PA. A negative cofactor containing Dr1/p19 modulates transcription with TFIIA in a promoter-specific fashion. **J Biol Chem** 1996; 271: 18405-12.

20. Scully R, Anderson SF, Chao DM, Wei W, Ye L, Young RA, Livingston DM, **Parvin JD**. BRCA1 is a component of the RNA polymerase II holoenzyme. **Proc Natl Acad Sci U S A** 1997; 94: 5605-10.

21. Nakajima T, Uchida C, Anderson SF, **Parvin JD**, Montminy M. Analysis of a cAMP-responsive activator reveals a two-component mechanism for transcriptional induction via signal-dependent factors. **Genes Dev** 1997; 11: 738-47.

22. Nakajima T, Uchida C, Anderson SF, Lee CG, Hurwitz J, **Parvin JD**, Montminy M. RNA helicase A mediates association of CBP with RNA polymerase II. **Cell** 1997; 90: 1107-12.

23. Neish AS, Anderson SF, Schlegel BP, Wei W, **Parvin JD**. Factors associated with the mammalian RNA polymerase II holoenzyme complex. **Nuc Acids Res** 1998; 26: 847-53.

24. Saha P, Chen J, Thome KC, Lawlis SJ, Hou Z, Hendricks M, **Parvin JD**, Dutta A. Human CDC6/Cdc18 associates with Orc1 and cyclin/cdk proteins and is selectively eliminated from the nucleus at the onset of S phase. **Mol Cell Biol** 1998; 18: 2758-67.

25. Anderson SF, Schlegel BP, Nakajima T, Wolpin ES, **Parvin JD**. BRCA1 protein is linked to the RNA polymerase II holoenzyme complex via RNA helicase A. **Nature Genetics** 1998; 19: 254-6.

26. Qiu X, Lin Y, Thome KC, Pian P, Schlegel BP, Weremowicz S, **Parvin JD**, Dutta A. An eukaryotic RuvB-like protein (RUVBL1) essential for growth. **J Biol Chem** 1998; 273: 27786-93.

27. Haile DT, **Parvin JD**. Activation of transcription *in vitro* by the BRCA1 carboxy-terminal domain. **J Biol Chem** 1999; 274, 2113-7.

28. Schlegel BP, Green VJ, Ladias JAA, **Parvin JD**. BRCA1 interaction with RNA polymerase II reveals a role for hRPB2 and hRPB10α in activated transcription. **Proc Natl Acad Sci USA** 2000; 97, 3148-53.

29. Chiba N, Suldan Z, Freedman LP, **Parvin JD**. Binding of liganded vitamin D receptor to the DRIP coactivator complex induces interaction with RNA polymerase II. **J Biol Chem** 2000; *275*, 10719-22. (accelerated publication)

30. Mondal N, **Parvin JD.** DNA Topoisomerase IIα is required for RNA polymerase II transcription on chromatin templates. **Nature** 2001; *413*, 435-38.

31. Chiba N, **Parvin JD** Redistribution of BRCA1 among four different protein complexes following replication blockage. **J Biol Chem** 2001; *276,* 38549-54.

32. Chiba N, **Parvin JD.** The BRCA1 and BARD1 association with the RNA polymerase II holoenzyme. **Cancer Research** 2002; *62*, 4222-8.

33. Schlegel BP, Starita LM, **Parvin JD**. Overexpression of a protein fragment of RNA Helicase A causes inhibition of endogenous BRCA1 function and defects in ploidy and cytokinesis in mammary epithelial cells. **Oncogene** 2003; *22*, 983-91.

34. Mondal N, Zhang Y, Jonsson Z, Dhar S, Kannapiran M, **Parvin JD.** Elongation by RNA polymerase II on chromatin templates requires topoisomerase activity. **Nuc Acids Res** 2003; *31*, 5016-24.

35. Zhang Y, Griffin K, Mondal N, and **Parvin JD.** Phosphorylation of histone H2A inhibits transcription on chromatin templates. **J Biol Chem** 2004; *279*, 21866-72.

36. You F, Chiba N, Ishioka C, and **Parvin JD.** Expression of an amino-terminal BRCA1 deletion mutant causes a dominant growth inhibition in MCF10A cells. **Oncogene** 2004; *23*, 5792-5798.

37. Starita LM, Machida Y, Sankaran S, Elias JE, Griffin K, Schlegel BP, Gygi SP, and **Parvin JD.** BRCA1-dependent ubiquitination of γ-tubulin regulates centrosome number. **Mol Cell Biol.** 2004: *24*, 8457-8466.

38. Takeda DY, **Parvin JD**, and Dutta A. Degradation of cdt1 during S phase is skp2 independent and is required for efficient progression of mammalian cells through S phase. **J Biol Chem** 2005: *280*, 23416-23.

39. Park WH, Margossian S, Horwitz A, Simons AM, D'Andrea AD, and **Parvin JD.** Direct DNA binding activity of the Fanconi Anemia D2 protein. **J Biol Chem** 2005: *280*, 23593-8.

40. Starita LM, Horwitz AA, Keogh MC, Ishioka C, **Parvin JD***, and Chiba N*. BRCA1/BARD1 ubiquitinate phosphorylated RNA polymerase II. **J Biol Chem** 2005: *280*, 24498-505. (*co-corresponding authors)

41. Mondal N, and **Parvin JD**. The tumor suppressor protein p53 functions similarly to p63 and p73 in activating transcription in vitro. **Cancer Biology and Therapy** 2005: *4*, 414-8.

42. Sankaran S, Starita LM, Groen AC, Ko MJ, and **Parvin JD**. Centrosomal microtubule nucleation activity is inhibited by BRCA1-dependent ubiquitination. **Mol Cell Biol.** 2005: *25*, 8656-68.

43. Takeda, DY, Shibata, Y, **Parvin, JD**, and Dutta, A. Recruitment of replication factors to DNA is sufficient to stimulate replication initiation in mammalian cells. **Genes Dev** 2005: *19*, 2827-36.

44. Ko MJ, Murata K, Hwang DS, and **Parvin JD**. Inhibition of BRCA1 in breast cell lines causes the centrosome duplication cycle to be disconnected from the cell cycle. **Oncogene** 2006: *25*, 298-303.

45. Simons, AM, Horwitz, AA, Starita, LM, Williams, RS, Griffin, K, Glover, JNM, and **Parvin, JD.** BRCA1 DNA binding activity is stimulated by BARD1. **Cancer Res** 2006: *66*, 2012-8.

46. Sankaran, S, Starita, LM, Simons, AM, and **Parvin, JD**. Identification of domains of BRCA1 critical for the ubiquitin-dependent inhibition of centrosome function. **Cancer Res** 2006: *66*, 4100-7.

47. Horwitz AA, Sankaran S, and **Parvin JD**. Direct stimulation of transcription initiation by BRCA1 requires both its amino and carboxy-termini. **J Biol Chem** 2006 *281*, 8317-20. (accelerated publication)

48. Toretsky, JA, Erkizan, V, Levenson, A, Abaan, OD, **Parvin, JD**, Cripe, TP, Rice, AM, Lee, SB, Üren, A. Oncoprotein Ews-Fli1 Activity Is Enhanced By RNA Helicase A (RHA). **Cancer Res** 2006 *66*, 5574-81.

49. Kontopoulos, E, **Parvin, JD**, and Feany, M. Alpha-synuclein acts in the nucleus to inhibit histone acetylation and promote neurotoxicity. **Human Molecular Genetics** 2006 *15*, 3012-23.

50. Horwitz AA, Affar EB, Heine GF, Shi Y, and **Parvin JD**. A mechanism for transcriptional repression dependent on the BRCA1 E3 ubiquitin ligase. **Proc Natl Acad Sci USA** 2007 *104*, 6614-9.

51. Pujana, MA*, Han, JD*, Starita, LM*, Stevens, Kn*, Tewari, M, Ahn, JS, Rennert, G, Moreno, V, Assmann, V, ElShamy, WM, J Rual, JF, Rozek, LS, Gelman, RS, Gunsalus, KC, Greenberg, RA, Sobhian, B, Bertin, N, Venkatesan, K, Ayivi-Guedehoussou, N, Lázaro, C, Nathanson, KL, Weber, BL, Cusick, ME, Hill, DE, Livingston, DM, Gruber, SB**, **Parvin, JD****, and Vidal, M**. Network modeling links breast cancer susceptibility and centrosome dysfunction. **Nat Genet** 2007 *39*, 1338-49. (*co-first authors; **co-corresponding authors)

52. Sankaran S, Crone DE, Palazzo RE, and Parvin JD. Aurora A Kinase Regulates BRCA1 Inhibition of Centrosome-Dependent Microtubule Nucleation. **Cancer Res** 2007 *67*, 11186-94.

53. Sankaran S, Crone DE, Palazzo RE, and Parvin JD. BRCA1 regulates γ-tubulin binding to centrosomes. **Cancer Biology and Therapy** 2007 *6*: 1853-7.

54. Heine, GF, Horwitz AA, and Parvin JD. Multiple mechanisms contribute to inhibit transcription in response to DNA damage. **J Biol Chem** 2008 *283*, 9555-61.

55. Johnson N, Cai D, Kennedy RD, Pathania S, Arora M, D'Andrea AD, **Parvin JD**, and Shapiro GI. CDK1 participates in BRCA1-dependent S phase checkpoint control in response to DNA damage. **Mol Cell** 2009 *35*:327-39.

56. Taslim C, Wu J, Yan P, Singer G, **Parvin JD**, Huang T, Lin S, Huang K. Comparative study on ChIP-seq data: Normalization and binding pattern characterization. **Bioinformatics** 2009 *25*:2334-40.

57. Thakar A, **Parvin JD**, Zlatanova J. BRCA1/BARD1 E3 ubiquitin ligase can modify histones H2A and H2B in the nucleosome particle. **Journal of Biomolecular Structure & Dynamics** 2010 *27 In press*

58. *Ransburgh DJR, *Chiba N, Ishioka C, Toland AE, and **Parvin JD**. The effect of BRCA1 missense mutations on homology directed recombination. *Submitted.*

Original reports in submission

59. Lamber EP, Horwitz AA, and **Parvin JD**. BRCA1 represses Amphiregulin gene expression. *Submitted.*

Reviews

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Parvin Declaration
Exhibit 2

BRCA1 specific papers by Dr. Jeffrey Parvin

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