

# ***CURRICULUM VITAE***

## **JUSTIN COURCELLE**

Portland State University  
Department of Biology  
P.O. Box 751  
Portland, Oregon 97207-0751  
phone: (503) 725-3866  
email: justc@pdx.edu

### **Education**

Post-Doc	2000	Mutagenesis, University of Paris
Ph.D.	1999	Cancer Biology, Stanford University
B.S.	1992	Biology, University of Vermont

### **Employment**

Asst, Assoc, Professor, Portland State University, 2005-present  
Asst Professor, Mississippi State University, 2000-2005  
Postdoctoral Research with Miloslav Radman, University of Paris, 1999-2000  
Dissertation Research with Philip Hanawalt, Stanford University, 1994-1999  
Graduate Research with Michael Lieber, Stanford University, 1992-1994  
Undergraduate Research with Susan Wallace, University of Vermont 1990-1992

### **Publications**

- Perera AV; Mendenhall JB; Courcelle CT; **Courcelle J.** (2016) Cho endonuclease functions during DNA interstrand crosslink repair in *Escherichia coli*. ***Journal of Bacteriology*** (in press).
- **Courcelle J**; Wendel BM; Livingstone DD; Courcelle CT. (2015) RecBCD is required to complete chromosomal replication: Implications for double strand break frequencies and repair mechanisms. ***DNA Repair*** 32:86-95.
- Wendel BM; Courcelle CT; **Courcelle J.** (2014) Completion of DNA Replication in *Escherichia coli*. ***Proceedings of the National Academy of Sciences of the United States of America*** 111:16454-9.
- Jeiranian HA; Schalow BJ; Courcelle CT; **Courcelle J.** (2013) Fate of the replicosome following arrest by UV-Induced DNA Damage in *Escherichia coli*. ***Proceedings of the National Academy of Sciences of the United States of America*** 110:11421-6.
- Courcelle CT; Landstrom AJ; Anderson B; **Courcelle J.** (2012) Cellular Characterization of the Primosome and Rep Helicase in Processing and Restoration of Replication following Arrest by UV-Induced DNA Damage in *Escherichia coli*. ***Journal of Bacteriology*** 194:3977-86.

- Jeiranian HA; Courcelle CT; **Courcelle J.** (2012) Inefficient replication reduces RecA-mediated repair of UV-damaged plasmids introduced into competent *Escherichia coli*. *Plasmid* 68:113-24.
- Newton K, Courcelle CT, **Courcelle J.** (2012) UvrD participation in nucleotide excision repair is required for the recovery of DNA synthesis following UV-Induced damage in *Escherichia coli*. *Journal of Nucleic Acids* 2012:271453.
- Schalow BJ; Courcelle CT; **Courcelle J.** (2012) Mfd is required for the rapid recovery of transcription following UV-induced damage but not oxidative DNA damage in *Escherichia coli*. *Journal of Bacteriology* 194:2637-45.
- Schalow BJ; Courcelle CT; **Courcelle J.** (2011) *Escherichia coli* Fpg Glycosylase Is Nonredundant and Required for the Rapid Global Repair of Oxidized Purine and Pyrimidine Damage *In Vivo*. *Journal of Molecular Biology* 410:183-93.
- Jeiranian HA; Schalow BJ; **Courcelle J.** (2010) Visualization of UV-induced replication intermediates in *E. coli* using two-dimensional agarose-gel analysis. *JoVE* 46:2220.
- Michel-Marks E; Courcelle CT; Korolev S; **Courcelle J.** (2010) ATP binding, ATP hydrolysis, and protein dimerization are required for RecF to catalyze an early step in the processing and recovery of replication forks disrupted by DNA damage. *Journal of Molecular Biology* 401:579-89.
- **Courcelle J.** Shifting replication between IInd, IIIrd, and IVth gears. *Proceedings of the National Academy of Sciences of the United States of America* (2009) 106: 6027-28.
- Ona KR; Courcelle CT; **Courcelle J.** Nucleotide excision repair is a predominant mechanism for processing nitrofurazone-induced DNA damage in *Escherichia coli*. *Journal of Bacteriology* (2009) 191:4959-65.
- Al-Hadid Q; Ona KR; Courcelle CT; **Courcelle J.** RecA433 cells are defective in recF-mediated processing of disrupted replication forks but retain recBCD-mediated functions. *Mutation Research* (2008) 645:19-26.
- Belle JJ; Casey A; Courcelle CT; **Courcelle J.** Inactivation of the DnaB helicase leads to the collapse and degradation of the replication fork: a comparison to UV-induced arrest. *Journal of Bacteriology* (2007) 189:5452-62.
- Koroleva O; Makharashvili N; Courcelle CT; **Courcelle J.**; Korolev S. Structural conservation of RecF and Rad50: implications for DNA recognition and RecF function. *EMBO Journal* (2007) 26:867-77.
- Chow KH; **Courcelle J.** RecBCD and RecJ/RecQ initiate DNA degradation on distinct substrates in UV-irradiated *Escherichia coli*. *Radiation Research* (2007) 168:499-506.
- Donaldson JR; Courcelle CT; **Courcelle J.** RuvABC Is Required to Resolve Holliday Junctions That Accumulate following Replication on Damaged Templates in *Escherichia coli*. *Journal of Biological Chemistry* (2006) 281:28811-21.

- Courcelle CT; Chow KH; Casey A; **Courcelle J**. Nascent DNA processing by RecJ favors lesion repair over translesion synthesis at arrested replication forks in *Escherichia coli*. *Proceedings of the National Academy of Sciences of the United States of America* (2006) 103: 9154-9.
- Courcelle CT; **Courcelle J**. Monitoring replication following UV-induced damage in *Escherichia coli*. *Methods in Enzymology*. (2006) 409:425-41.
- Courcelle CT; Belle JJ; **Courcelle J**. Nucleotide excision repair or Pol V-mediated lesion bypass can act to restore UV-arrested replication forks in *Escherichia coli*. *Journal of Bacteriology* (2005) 187:6953-61.
- **Courcelle J**. Recs preventing wrecks. *Mutation Research*. (2005) 577:217-27.
- **Courcelle J**; Belle JJ; Courcelle CT. When replication travels on damaged templates: bumps and blocks in the road. *Research in Microbiology* (2004) 155 231-7.
- Donaldson JR; Courcelle CT; **Courcelle J**. RecG or RuvAB is not required for the resumption of replication following UV irradiation *Escherichia coli*. *Genetics* (2004) 166:1631-40.
- Chow KH; **Courcelle J**. RecO functions together with RecF and RecR to stabilize DNA damage-blocked replication forks following UV irradiation *Escherichia coli*. *Journal of Biological Chemistry* (2004) 279:3492-6.
- **Courcelle J**, Hanawalt, PC. RecA-dependent repair of arrested replication forks. *Annu Rev Genet* (2003) 37: 611-46.
- **Courcelle J**, Donaldson JR, Chow KH, Courcelle CT. UV-induced replication fork regression and processing in *Escherichia coli*. *Science*, (2003) 299:1064-7.  
(highlight) LeBrasseur, N. Rec'd and repaired. *Journal of Cell Biology* (2003) 106:464-5
- Crowley DJ, **Courcelle J**. Answering the Call: Coping with DNA Damage at the Most Inopportune Time. *Journal of Biomedicine and Biotechnology* (2002) 2: 66-74.
- **Courcelle J**; Hanawalt PC. Participation of recombination proteins in rescue of arrested replication forks in UV-irradiated *Escherichia coli* need not involve recombination. *Proceedings of the National Academy of Sciences of the United States of America* (2001) 98: 8196-8202.
- Courcelle CT; **Courcelle J**; Prichard MN; Mocarski ES. Requirement for Uracil-DNA Glycosylase during the Transition to Late-Phase Cytomegalovirus DNA Replication *Journal of Virology* (2001) 75: 7592-7601.
- **Courcelle J**; Ganesan AK; Hanawalt PC. Therefore, what are recombination proteins there for? *BioEssays* (2001) 23:463-470.  
(editorial) Gene names: the approaching end of a century-long dilemma Wilkins A.S. *BioEssays* (2001) 23:377-378.

- **Courcelle J**; Khodursky A; Peter B; Brown PO; Hanawalt PC Comparative gene expression profiles following UV exposure in wild type and SOS deficient *Escherichia coli*. *Genetics* (2001) 158: 41-64.
- **Courcelle J**; Hanawalt PC. RecQ and RecJ Process Blocked Replication Forks Prior to the Resumption of Replication in UV-Irradiated *Escherichia coli*. *Molecular and General Genetics* (1999) 262:543-51.
- **Courcelle J**; Crowley DJ; Hanawalt PC. Recovery of DNA replication in UV-Irradiated *Escherichia coli* requires both excision repair and RecF protein function. *Journal of Bacteriology* (1999)181:916-22.
- **Courcelle J**; Carswell-Crumpton C; Hanawalt PC. *recF* and *recR* are required for the resumption of replication at DNA replication forks in *Escherichia coli*. *Proceedings of the National Academy of Sciences of the United States of America* (1997) 94:3714-9.  
(commentary) Kogoma T. Is RecF a DNA replication protein? *Proceedings of the National Academy of Sciences of the United States of America* (1997) 94:3483-4.
- Koehler DR; **Courcelle J**; Hanawalt PC. Kinetics of pyrimidine(6-4) pyrimidone photoproduct repair in *Escherichia coli*. *Journal of Bacteriology* (1996) 178:1347-50.
- Sodora DL; **Courcelle J**; Brojatsch J; Berson A; Wang YC; Dow SW; Hoover EA; Mullins JI. Analysis of a feline immunodeficiency virus; provirus reveals patterns of gene sequence conservation distinct from human immunodeficiency virus type1. *Aids Research and Human Retroviruses* (1995) 11:531-3.
- Evans J; Maccabee M; Hatahet Z; **Courcelle J**; Bockrath R; Ide H; Wallace S. Thymine ring saturation and fragmentation products: lesion bypass, misinsertion and implications for mutagenesis. *Mutation Research* (1993) 299:147-56

### Grants

- National Science Foundation MCB01518142 (2015-2018), **\$460,000** *The completion of DNA replication.*
- National Institute of Health-NIEHS, R15ES025953 (2015-2018), **\$445,500** *Mechanism of DNA interstrand crosslink repair in vivo.*
- EXITO Build Scholar Student Supplement (2015) **\$10,000**
- National Institute of Health-NIEHS, 1R15ES021594 (2012-2015), **\$436,500** *Replication in the Presence of Oxidative DNA damage.*
- National Institute of Health-NIEHS, 1R21ES018940 (2010-2013), **\$397,662** *Transcription-coupled repair of oxidative DNA damage in vivo.*
- National Institute of Health-NIGMS, R15GM086839 (2009-2012), **\$219,729** *AREA-Repair of DNA Ends Following Damage in vivo.*
- National Science Foundation 1012869 (2010), **\$12,000 CAREER: Processing DNA damage during replication, ROA supplement.**
- National Science Foundation MCB0551798 (2005-2010), **\$748,718 CAREER: Processing DNA damage during replication.**
- National Research Service Award F32 GM068566-01 (awarded to CT Courcelle 2003-2006) **\$155,712** *DNA Replication Termination in Escherichia coli*

- National Science Foundation 0622789 (2006), **\$9,900 CAREER: Processing DNA damage during replication, ROA supplement.**
- National Science Foundation MCB0130486 (2002-2005), **\$416,377 Recovery of Replication Following UV-induced DNA damage.**
- National Science Foundation MCB0319119 (2003-2004), **\$26,769 Recovery of Replication Following UV-induced DNA damage, Graduate supplement.**
- Research Initiation Program (2001-2002), **\$10,000, Determination of the Mechanism by which Replication Recovers Following Disruption by DNA Damage**

### **Fellowships and Honors**

- Faculty Research Award, College of Arts and Sciences, MSU 2004
- European Molecular Biology Organization (EMBO) Post-Doctoral Fellowship, 1999-01
- National Cancer Institute Traineeship, Cancer Biology Program, 1996-1999
- National Science Foundation Predoctoral Fellowship, 1993-1996
- Vermont-NEA Townsend Scholarship, 1993
- Benedict Award in Biology, UVM, 1992
- HELiX minigrant award, UVM, 1991
- Chemical Rubber Company Chemistry Award, UVM, 1990

### **Presentations at Professional Meetings**

#### *Invited Speaker*

- Asilomar Conference on DNA Repair; Monterey CA May 2017
- Cold Spring Harbor Laboratories; Advanced Microbial Genetics; Cold Spring Harbor NY June 2016
- Gordon Conference; Carcinogenesis & Mutagenesis; Ventura, CA Mar 2014
- Wind River Conference; Prokaryotic Biol; CO June 2008
- Gordon Conference; Nucleic Acids; Newport, RI June 2005.
- American Society for Biochemistry and Molecular Biology; San Diego, CA Apr 2005.
- American Society for Microbiology Conference on DNA Repair; Bermuda, Nov 2004.
- Asilomar Conference on DNA Repair Mechanisms; Monterey, CA, Oct 2004.
- Gordon Conference; Carcinogenesis & Mutagenesis; Ventura, CA Mar 2004
- Asilomar Conference on DNA Repair Mechanisms; Monterey, CA, Oct 2002.
- Keystone Symposia; Molecular Mechanisms in DNA Replication and Recombination; Snowbird, UT, Jan 2002.
- Fallen Leaf Lake Conference; Workshop on DNA Repair; Lake Tahoe, CA Oct 2001
- Keystone Symposia; Molecular Mechanisms in DNA Replication and Recombination; Taos, NM, Feb 1999.
- Gordon Conference; Mutagenesis; Plymouth State College, NH, Jun 1996.
- Cancer Biology; Asilomar Conference Center, CA, Sept 1995-1997.

#### *Invited Seminars*

- Dept of Microbiology, Oregon St U, Corvallis, OR Apr 2015.
- Dept of Microbiology and Molecular Genetics, OHSU, Portland, OR Mar 2015.
- Dept of Biology, U Nevada, Las Vegas, NV Jan 2010.
- Div of Env and Biomol Systems, OHSU, Feb 2010

- Dept of Molec Biol Biochem, U Minnesota, Minneapolis, MN Mar 2008.
- Dept of Biology, Santa Clara University, Santa Clara, CA May 2007.
- Dept of Biochem and Biophys, Oregon St U, Corvallis, OR May 2007.
- Dept of Genetics, OHSU, Portland, OR Feb 2007.
- Dept of Biology, Reed College, Portland, OR Sept 2006.
- Dept of Mol Biol and Pharm, U Mass Sch of Med, Worcester, MA Oct 2005.
- Dept of Biochemistry, Univ of Mississippi Med Center, Jackson, MS May 2005.
- Dept. of Rad Oncology, City of Hope, Duarte, CA. Sept 2004.
- Dept of Biology, Cameron Univ, Lawton, OK. Feb 2004.
- Dept of Biology, Univ of Louisiana, Lafayette, LA. Jan 2004.
- Dept of Micro & Immun, Univ of California, Irvine, CA. Dec 2003.
- Dept of Micro & Immun, Temple Univ Sch of Med, Philadelphia, PA. Nov 2003.
- Dept. of Rad Oncology, Univ Maryland Sch of Med, Baltimore, MD. Oct 2003.
- Dept of Biochem & Mol Bio, St Louis U. Sch of Med, St. Louis, MO. Aug 2003.
- Dept of Biology, Troy State University, Troy, AL. Mar 2003
- Dept of Molec Biol., Univ of Texas Health Center at Tyler. Tyler, TX. Mar 2003
- Dept of Molec Biochem., Rice University, Houston, TX. Mar 2003.
- Dept of Biol., University of Southern Mississippi, Hattiesburg, MS Jan 2003
- Dept of Biol., University of Alabama, Tuscaloosa, AL Nov 2002
- Dept of Biol., Portland State University, Portland, OR Feb 2002
- Dept of Biol., University of the Pacific, Stockton, CA. Jan 2002
- Dept of Microbiol., University of Hawaii, Honolulu, HI. Jan 2002
- Dept. Rad. Onc., Washington University, St. Louis, MO. Dec 2001.
- Biol Dept., Southeastern Louisiana University, Hammond, LA. Nov 2001.
- Dept of Biochem., Mississippi State University, Miss State, MS. May 2000, Jan 2001.
- Dept of Molec Biol., University of Texas Health Center at Tyler. Tyler, TX. May 1999.
- Dept of Biol., Centenary College. Shreveport, LA. May 1999.
- Dept of Biol., Grinnell College. Grinnell, IA. Apr 1999.

### **Teaching, Mentoring and Curricular Achievements**

#### *Teaching*

##### *@PSU*

- Intro Genetics BI 341U & BI 341R
- Microbial Genetics BI 410/510
- Recombinant DNA Techniques BI 431/531
- Biology Seminar Series BI 607
- Adv Biology Topics BI 507
- Graduate Research Prospectus BI 598
- Graduate Grant Writing BI 599
- Molecular and Microbiology Journal Club BI 510/610

##### *@MSU*

- Bacterial Genetics BIO4443/6443
- Topics in Genome Stability BIO 8990
- Topics in Cancer Biology BIO 8990

- Biology Seminar Series BIO 8011/8021

### *Mentoring*

- Nicklas Hamilton, PhD 2016-present
- Jessica Cole, MS 2015-present
- Brian Wendel, PhD 2012-present
- Vidya Perera, MS 2012-2015
- Brandy Schalow, MS 2008-2013
- Arthur Jeiranian, PhD 2006-2012
- Kelly Newton, MS 2008-2011
- Emilie Michel-Marks, MS 2008-2011
- Jay Mellies, Visiting Scientist 2010
- Katherine Ona, MS 2006-2008
- David Crowley, Visiting Scientist 2006
- Charmain Courcelle, Post-Doc 2004-2006
- Jerilyn Belle, PhD 2003-2006
- Janet R Donaldson, PhD 2001- 2004
- Kin-Hoe Chow, MS 2001-2003
- Undergraduate, High School, and Rotational Student Researchers: (@ PSU) Sean Van Walchren, Jessica Schiebel, Samuel Roberts, Dena Livingstone, Corinne Hutfilz, Samvel Nazaretyan, Michael Sedak, Michael Hernandez, Neda Savic, James Mendenhall, Curtis Cooksey, Laura Quinn, Elisia Downs, Brit Anderson, Adam Therneau, Tarek Salih, Emily MacDonald, Andrew Stewart, Sydmarie Boyle, Qais Al-Hadid, Allison J Landstrom, Andrew Casey, Craig Johnston Elizabeth Campbell. (@ MSU) Oleksandr Tokarsky, Aparna Nandiraju, Joshua McGuire, Melissa Morton, Misty Hubenthal, LaRhonda Jefferson, Cynthia Doffitt, Padmini Jayaraman, Krista Mophett.

### **Governance Activities for the University, College, Department**

#### @Portland State University

- Biosafety Committee, 2011-2014
- Faculty Grievance Committee 2011-12
- Chair, Graduate Affairs Committee, 2009-2015.
- Promotion and Tenure Committee, Dept Biology 2006-08, 2009-11
- Department of Biology Faculty Secretary 2005-present

#### @Mississippi State University

- Research Advancement Committee 2004-2005
- Hazardous Waste Committee, 2002-2004
- Radiation Safety Committee, 2002-2004
- Microbiology Undergraduate Curriculum Committee, 2002-2005
- Biology Undergraduate Curriculum Committee, 2001-2005

#### @Stanford University

- Freshman and Sophomore Academic Advisor, 1995-1999
- Graduate Admissions Committee, Program in Cancer Biology, 1998

### **Professionally-related Service**

- Guest Editor PLoS Genetics 2014-present.
- Oregon Stem Cell Research Oversight Committee 2009-present.
- Managing editor, *Frontiers in Bioscience*, DNA damage and replication 2010-11.
- Associate editor, *Frontiers in Bioscience*, Genomic Assay Technology 2010-present.
- Review panelist, National Science Foundation, Molecular and Cellular Biosciences 2003-2008, 2010-2011, 2014-2017
- Review panelist or chair, National Institute of Health, MGB, GGG, 2008, 2011-2016
- Review panelist, NASA, Exobiology 2007, 2010
- Ad-Hoc Referee for the following Journals: *Proc Nat Acad Sci USA*, *Nature*, *Science*, *Genetics*, *Molec and Gen Genet*, *Cell*, *Mol Cell*, *J Bact.*, *Genes to Cells*, *EMBO*, *Mol. Microbiol*, *Nucl Acid Res.*, *Mut Res*, *Rad Res*, *DNA Repair*, *FEMS Letters*, *PLOSone*, *PLOS Genet*,
- Referee for the following Grant Agencies: National Science Foundation, US Military Research Office, LA State Science Foundation, French National Research Agency (ANR), Natural Science and Engineering Research Council of Canada (NSERC), Florida Dept of Health, Pennsylvania Dept of Health.

### **Memberships in Professional Societies**

- American Society of Microbiology 2002-present