CURRICULUM VITAE

CHRISTOPHER P. DILLON

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EDUCATION

2006	**Ph.D.**, Massachusetts Institute of Technology, Cambridge, Massachusetts (Biology)
2000	**B.S.**, University of California, Davis, Davis, California (Biochemistry)

RESEARCH

2006-present	**Postdoctoral Research Associate**, Laboratory of Dr. Douglas Green, Department of Immunology, St. Jude Children's Research Hospital, Memphis, TN. • Necroptosis, a novel cell death mechanism in mammalian development and immune function.
2000-2006	**Graduate Research Associate**, Laboratories of Dr. Luk van Parijs and Dr. Phillip Sharp, Department of Biology, Massachusetts Institute of Technology, Cambridge, MA. • *In vivo* delivery systems for RNA interference.
1998-2000	**Undergraduate Research Student**, Laboratory of Dr. Gino Cortopassi, School of Veterinary Medicine, University of California, Davis, Davis, CA. • Generation of mutant mitochondrial cybrid lines via microinjection.

PUBLICATIONS

Haverkamp JM, Smith AM, Weinlich R, **Dillon CP**, Qualls JE, Neale G, Koss B, Kim Y, Bronte V, Herold MJ, Green DR, Opferman JT, Murray PJ. Myeloid-derived suppressor activity is mediated by monocytic lineages maintained by continuous inhibition of extrinsic and intrinsic death pathways. **Immunity**. 2014 Dec 18;41(6):947-59. Epub 2014 Dec 11.

Ganesan S, Rathinam VA, Bossaller L, Army K, Kaiser WJ, Mocarski ES, **Dillon CP**, Green DR, Mayadas TN, Levitz SM, Hise AG, Silverman N, Fitzgerald KA. Caspase-8 Modulates Dectin-1 and Complement Receptor 3-Driven IL-1β Production in Response to β-Glucans and the Fungal Pathogen, Candida albicans. **J Immunol**. 2014 Sep 1;193(5):2519-30. Epub 2014 Jul 25.

Dillon CP*, Weinlich R*, Rodriguez DA*, Cripps JG, Quarato G, Gurung P, Verbist KC, Brewer TL, Llambi F, Gong YN, Janke LJ, Kelliher MA, Kanneganti TD, Green DR. RIPK1 Blocks Early Postnatal Lethality Mediated by Caspase-8 and RIPK3. **Cell**. 2014 May 22;157(5):1189-202. Epub 2014 May 8. (*Equal contribution to paper)

Philip NH, **Dillon CP**, Snyder AG, Fitzgerald P, Wynosky-Dolfi MA, Zwack EE, Hu B, Fitzgerald L, Mauldin EA, Copenhaver AM, Shin S, Wei L, Parker M, Zhang J, Oberst A, Green DR, Brodsky IE. Caspase-8 mediates caspase-1 processing and innate immune defense in response to bacterial blockade of NF-κB and MAPK signaling. **Proc Natl Acad Sci U S A**. 2014 May 5. 2014 May 20;111(20):7385-90. Epub 2014 May 5.

Shenderov K, Riteau N, Yip R, Mayer-Barber KD, Oland S, Hieny S, Fitzgerald P, Oberst A, **Dillon CP**, Green DR, Cerundolo V, Sher A. Cutting edge: Endoplasmic reticulum stress licenses macrophages to produce mature IL-1β in response to TLR4 stimulation through a caspase-8- and TRIF-dependent pathway. **J Immunol**. 2014 Mar 1;192(5):2029-33. Epub 2014 Jan 31.

Gurung P, Anand PK, Malireddi RK, Vande Walle L, Van Opdenbosch N, **Dillon CP**, Weinlich R, Green DR, Lamkanfi M, Kanneganti TD. FADD and caspase-8 mediate priming and activation of the canonical and noncanonical Nlrp3 inflammasomes. **J Immunol**. 2014 Feb 15;192(4):1835-46. Epub 2014 Jan 22.

Weinlich R, Oberst A, **Dillon CP**, Janke LJ, Milasta S, Rodriguez DA, Gurung P, Savage C, Kanneganti TD, Green DR. Protective roles for caspase-8 and cFLIP in adult homeostasis. **Cell Rep**. 2013 Oct 31;5(2):340-8. Epub 2013 Oct 3.

Dillon CP, Oberst A, Weinlich R, Janke LJ, Kang T, Mak TW, Wallach D, Green DR. Survival function of the FADD-CASPASE-8-cFLIP$_L$ complex. **Cell Rep**. 2012 May 31;1(5):401-7.

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Wang R, **Dillon CP**, Shi LZ, Milasta S, Carter R, Finkelstein D, McCormick LL, Fitzgerald P, Chi H, Munger J, Green DR. The transcription factor Myc controls metabolic reprogramming upon T lymphocyte activation. **Immunity**. 2011 Dec 23;35(6):871-82.

Llambi F, Moldoveanu T, Tait SWG, Bouchier-Hayes L, Temirov J, McCormick LL, **Dillon CP**, Green DR. A unified model of mammalian BCL-2 protein family interactions at the mitochondria. **Mol Cell**. 2011 Nov 18;44(4):517-31. Epub 2011 Oct 27.

Weinlich R, **Dillon CP**, Green DR. Ripped to death. **Trends Cell Biol**. 2011 Nov;21(11):630-7. Epub 2011 Oct 4.

Martinez J, Almendinger J, Oberst A, Ness R, **Dillon CP**, Fitzgerald P, Hengartner MO, Green DR. LC3-associated phagocytosis is required for the efficient clearance of dead cells. **Proc Natl Acad Sci USA**. 2011 Oct 18;108(42):17396-401. Epub 2011 Oct 3.

Green DR, Oberst A, **Dillon CP**, Weinlich R, Salvesen GS. RIPK-dependent necrosis and its regulation by caspases: A mystery in five acts. **Mol Cell**. 2011 Oct 7;44(1):9-16.

Miller C, **Dillon C**, Martinez J, Parsons M, Weinlich R, Melino G. Scientists contemplate unexplained death in Austrian Alps. Meeting report in **EMBO Molecular Medicine**. 2011 Jul;3(7):363-6. Epub 2011 Jun 14.

Yeretssian G, Correa RG, Doiron K, Fitzgerald P**, Dillon CP**, Green DR, Reed JC, Saleh M. Genome-wide RNA interference for modifiers of NOD1 signaling identifies BID as a mediator of inflammation and innate immunity. **Nature**. 2011 Jun 2;474(7349):96-9. Epub 2011 May 8.

Gawriluk TR, Hale AN, Flaws JA, **Dillon CP**, Green DR, Rucker EB III. Autophagy is a cell survival program for female germ cells in the murine ovary. **Reproduction**. 2011 Jun;141(6):759-65. Epub 2011 Apr 4.

Oberst A, **Dillon CP**, Weinlich R, McCormick LL, Fitzgerald P, Pop C, Hakem R, Salvesen GS, Green DR. Catalytic activity of the caspase-8-FLIP$_L$ complex inhibits RIPK3-dependent necrosis. **Nature**. 2011 Mar 17;471(7338):363-7. Epub 2011 Mar 2.

Dillon CP, Green DR. Matters of life and death in the immune system. Chapter in **Essentials of apoptosis: A guide for basic and clinical research**. Xiao-Ming Yin (editor). 2009.

Ayrault O, Godeny MD, **Dillon C**, Zindy F, Fitzgerald P, Roussel MF, Beere HM. Inhibition of Hsp90 via 17-DMAG induces apoptosis in a p53-dependent manner to prevent medulloblastoma. **Proc Natl Acad Sci USA**. 2009 Oct 6;106(40):17037-42. Epub 2009 Sep 23.

Bouchier-Hayes L, Oberst A, McStay GP, Connell S, Tait SW, **Dillon CP**, Flanagan JM, Beere HM, Green DR. Characterization of cytoplasmic caspase-2 activation by induced proximity. **Mol Cell**. 2009 Sep 24;35(6):830-40.

Chipuk JE, Fisher JC, **Dillon CP**, Kriwacki RW, Kuwana T, Green DR. Mechanism of apoptosis induction by inhibition of the anti-apoptotic BCL-2 proteins. **Proc Natl Acad Sci USA**. 2008 Dec 23;105(51):20327-32. Epub 2008 Dec 12.

Sanjuan MA, **Dillon CP**, Tait SWG, Moshiach S, Dorsey F, Connell S, Komatsu M, Tanaka K, Cleveland JL, Withoff S, Green DR. Toll-like receptor signaling in macrophages links phagocytosis to the autophagy pathway. **Nature**. 2007 Dec 20;450(7173):1253-7.

Dillon CP, Sandy P, Nencioni A, Kissler S, Rubinson DA, Blume-Jensen P, Van Parijs L. RNAi as an experimental and therapeutic tool to study and regulate physiological and disease processes. **Annu Rev Physiol**. 2005;67:147-73.

Nencioni A, Hua F, **Dillon CP**, Yokoo R, Scheiermann C, Barbieri E, Rocco I, Garuti A, Wesselborg S, Belka C, Brossart P, Patrone F, Ballestrero A. Evidence for a protective role of Mcl-1 in proteasome inhibitor-induced apoptosis. **Blood**. 2005 Apr 15;105(8):3255-62. Epub 2004 Dec 21.

Ventura A, Meissner A, **Dillon CP**, McManus M, Sharp PA, Van Parijs L, Jaenisch R, Jacks T. Cre-lox-regulated conditional RNA interference from transgenes. **Proc Natl Acad Sci USA**. 2004 Jul 13;101(28):10380-5. Epub 2004 Jul 6.

Nencioni A, Sandy P, **Dillon C**, Kissler S, Blume-Jensen P, Van Parijs L. RNA interference for the identification of disease-associated genes. **Curr Opin Mol Ther**. 2004 Apr;6(2):136-40.

Rubinson DA*, **Dillon CP***, Kwiatkowski AV, Sievers C, Kopinja J, McManus MT, Gertler FB, Scott M, Van Parijs L. Functional and stable gene silencing in transgenic mice and primary mammalian cells by lentivirus-induced RNA interference. **Nat Genet**. 2003 Mar;33(3):401-6. Epub 2003 Feb 18. (*Equal contribution to paper).

McManus MT, Haines BB, **Dillon CP**, Whitehurst CE, Van Parijs L, Chen J, Sharp PA. Small interfering RNA-mediated gene silencing in T-lymphocytes. **J Immunol**. 2002 Nov 15;169(10):5754-60.

FUNDING AND AWARDS:

2008-2010	**SASS Foundation** for Medical Research Postdoctoral Fellowship.
2000-2005	**Howard Hughes Medical Institute** Predoctoral Fellowship.
2000-2003	**NSF** Graduate Fellowship (awarded, but declined in favor of HHMI fellowship).
1999	**Phi Beta Kappa**, University of California, Davis, Davis, CA.

LICENSED INVENTION:

2004-2014 **pLentiLox3.7**, Technology Licensing Office, Massachusetts Institute of Technology, Cambridge, MA.
• Novel lentiviral vectors for *in vivo* RNA interference. Licensed to Pfizer and Novartis.

TEACHING AND MENTORING:

Fall 2012 **Adjunct Assistant Professor**, Department of Biology, Rhodes College, Memphis, TN.
• Three week senior research seminar for undergraduate students. Developed all course content and testing materials, presented lectures, proctored and graded exams, and held office hours.

Spring 2012 **Mentor**, St. Jude Children's Research Hospital, Memphis, TN.
• Rhodes College undergraduate. Oversaw project development and completion of research report, trained in specific laboratory skills, and directly supervised lab activities.

2006-2014 **Mentor**, St. Jude Children's Research Hospital, Memphis, TN.
• Three mouse colony technical staff members. Trained staff in specific laboratory skills, supervised lab activities and work quality, and guided development of lab resources.

2003-2004 **Mentor**, Massachusetts Institute of Technology, Cambridge, MA**.**
• Two undergraduates. Trained in specific laboratory skills and directly supervised lab activities.

Spring 2003 **Teaching Assistant**, Introductory Immunology, Massachusetts Institute of Technology, Cambridge, MA.
• Taught undergraduate discussion sections, proctored exams, led review sessions, graded exams and assignments, and held office hours.

Fall 2002 **Teaching Assistant**, Introductory Biology Lab, Massachusetts Institute of Technology, Cambridge, MA.
• Taught four-hour undergraduate lab sessions four times per week. Proctored and graded exams and assignments, led review sessions, and held office hours.

INSTITUTIONAL SERVICE

2006-2013 **Postdoctoral Recruitment**, Academic Program Office, St. Jude Children's Research Hospital, Memphis, TN.
• Recruited for postdoctoral fellows at seven national and three international meetings in diverse fields. Assisted with preparation, planning, and hosting for the annual St. Jude National Graduate Student Symposium.

2006-2012 **Institutional Animal Care and Use Committee**, St. Jude Children's Research Hospital, Memphis, TN.
• Performed protocol review, attended monthly full committee meetings, conducted biannual programmatic review and facilities inspections, and participated on investigative subcommittees.

2007-2009 **Fundraising**, St. Jude Children's Research Hospital, Memphis, TN.
• Conducted lab tours for radio stations during annual "Country Cares" event.

INVITED SEMINARS

Dillon CP. Mechanisms of lethality in *ripk1*$^{-/-}$ mice. Presented at Cold Spring Harbor Laboratory Cell Death Meeting 2013. Cold Spring Harbor, NY. October 11, 2013.

Dillon CP. Confronting Misconduct: A first-hand account of the process and aftermath of exposing scientific fraud. Presented at Responsible Conduct of Research (RCR) Training Series, St. Jude Children's Research Hospital. Memphis, TN. November 12, 2012.

Dillon CP. TNF regulates dual death pathways in mice at E10.5. Presented at Immuno 2012: XXXVII Congress of the Brazilian Society of Immunology. Campos do Jordão, Brazil. October 22, 2012.

Dillon CP. TNF regulates dual death pathways in mice at E10.5. Presented at I Symposium of Cell Death ICB-USP. Sao Paulo, Brazil. October 16, 2012.

Dillon CP. TNF regulates dual death pathways in mice at E10.5. Presented at Society for Developmental Biology Southeast Regional Meeting. Memphis, TN. May 25, 2012.

Dillon CP. Double trouble: Delineating death checkpoints during mouse development. Presented at St. Jude Biomedical Research Forum. Memphis, TN. April 30, 2012.

Dillon CP. Imaging tumorigenesis *in vivo*. Presented at Midsouth American Association for Lab Animal Science. Memphis, TN. September 16, 2010.

Dillon CP. p53 in lymphoma and medulloblastoma. Presented at Midsouth American Association for Lab Animal Science. Birmingham, AL. April 24, 2009.

Dillon CP. Tails from the Green lab. Presented at St. Jude Animal Resource Center monthly meeting. Memphis, TN. March 18, 2008.

SELECTED POSTER PRESENTATIONS

Dillon CP, Oberst A**,** Weinlich R, Janke LJ, Green DR. TNF regulates dual death pathways in mice at E10.5. Presented at Immuno 2012: XXXVII Congress of the Brazilian Society of Immunology. Campos do Jordão, Brazil. October 22, 2012.

Dillon CP, Oberst A**,** Weinlich R, Janke LJ, Green DR. TNF regulates dual death pathways in mice at E10.5. Presented at Society for Developmental Biology National Meeting. Montreal, Canada. July 21, 2012.

Dillon CP, Weinlich R, Oberst A, Martinez J, McCormick LL, Fitzgerald P, Green DR. Functions of FADD, Flip, and caspase-8 in development revealed by ablation of RIPK3. Presented at Cold Spring Harbor Laboratory Cell Death 2011. Cold Spring Harbor, NY. October 12, 2011.

Dillon CP, Oberst A, Weinlich R, Martinez J, McCormick LL, Fitzgerald P, Pop C, Hakem R, Salvesen GS, and Green DR. Essential pro-survival role for caspase-8 during T-cell activation and embryonic development through inhibition of RIPK3-dependent necrosis. Presented at American Association of Immunologists Annual Meeting. San Francisco, CA. May 16, 2011.

Dillon CP, Oberst A, Weinlich R, Martinez J, McCormick LL, Fitzgerald P, Pop C, Hakem R, Salvesen GS, and Green DR. Rescuing the embryonic lethality of death receptor pathway knockouts through genetic ablation of necroptosis. Presented at EMBO Molecular Medicine Workshop 2011: Cell Death and Disease. Obergurgl, Austria. March 11, 2011.