CANCER BIOLOGY PATHWAY Luncheon
January 12, 2017 – 1 – 3 pm – Holden Auditorium

Agenda

Introduction of Cancer Biology Pathway Course	Lee Ratner, MD, PhD
Spring 2017 Course	Dave Wilson, MD, PhD

Presentations (2nd Year Appointees)
Angela Halstead, PhD – Arora Lab
Elizabeth Ostrander –Challen Lab
Simona Graziano – Gonzalo Lab

Poster session (1st Year Appointees)
Alex Wagner – Griffith Lab
Craig Barcus – Longmore Lab
Fiona Ruiz – Schwarz Lab
Katie Campbell – Griffith Lab
Jennifer Flynn – Wang Lab
Jasmine Sponagel – Rubin Lab
Juo-Chin Yao – Link Lab

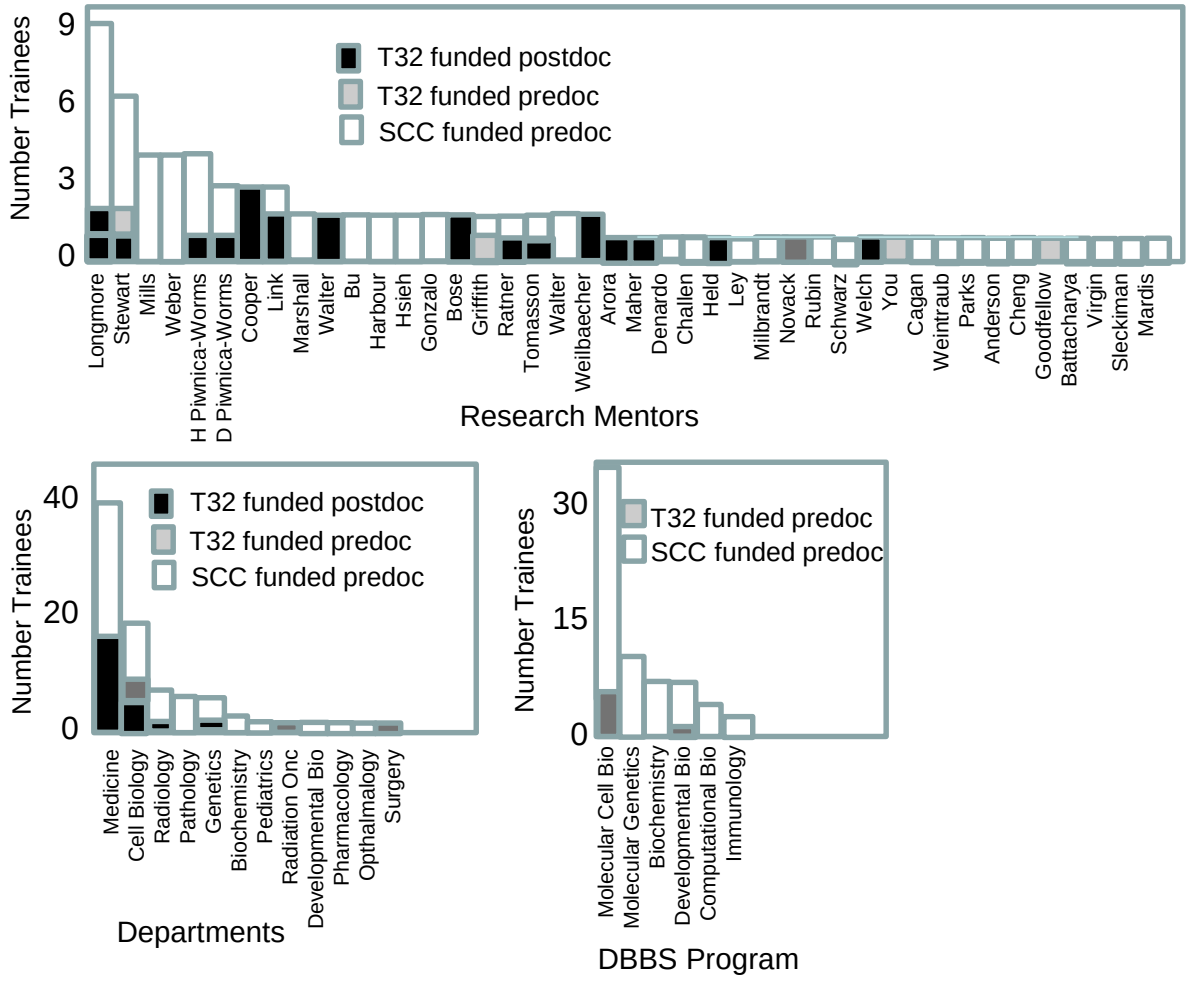
Objectives

- To train **graduate students and postdoctoral fellows** in cancer biology research
- Provide basic scientists training in basic, translational, and clinical cancer research
- Foster **interdisciplinary** collaborative undertakings

Program History

- Initiated with institutional funds in 2002 for graduate students
- Program expanded to postdoctoral students with funding of the T32 application in 2006 and full stipends. Successful recompetition in 2011 and ? 2017
- 66 predocs and 22 postdocs thus far
  - 2 students in 2014 & 2 postdocs in 2015
  - 5 students & 2 postdocs in 2016
  - ?1 student + ? 2 postdocs in 2017 and 3 students
- Didactic courses since 1999
- Interdisciplinary - students and fellows participating from many different fields in multiple departments.

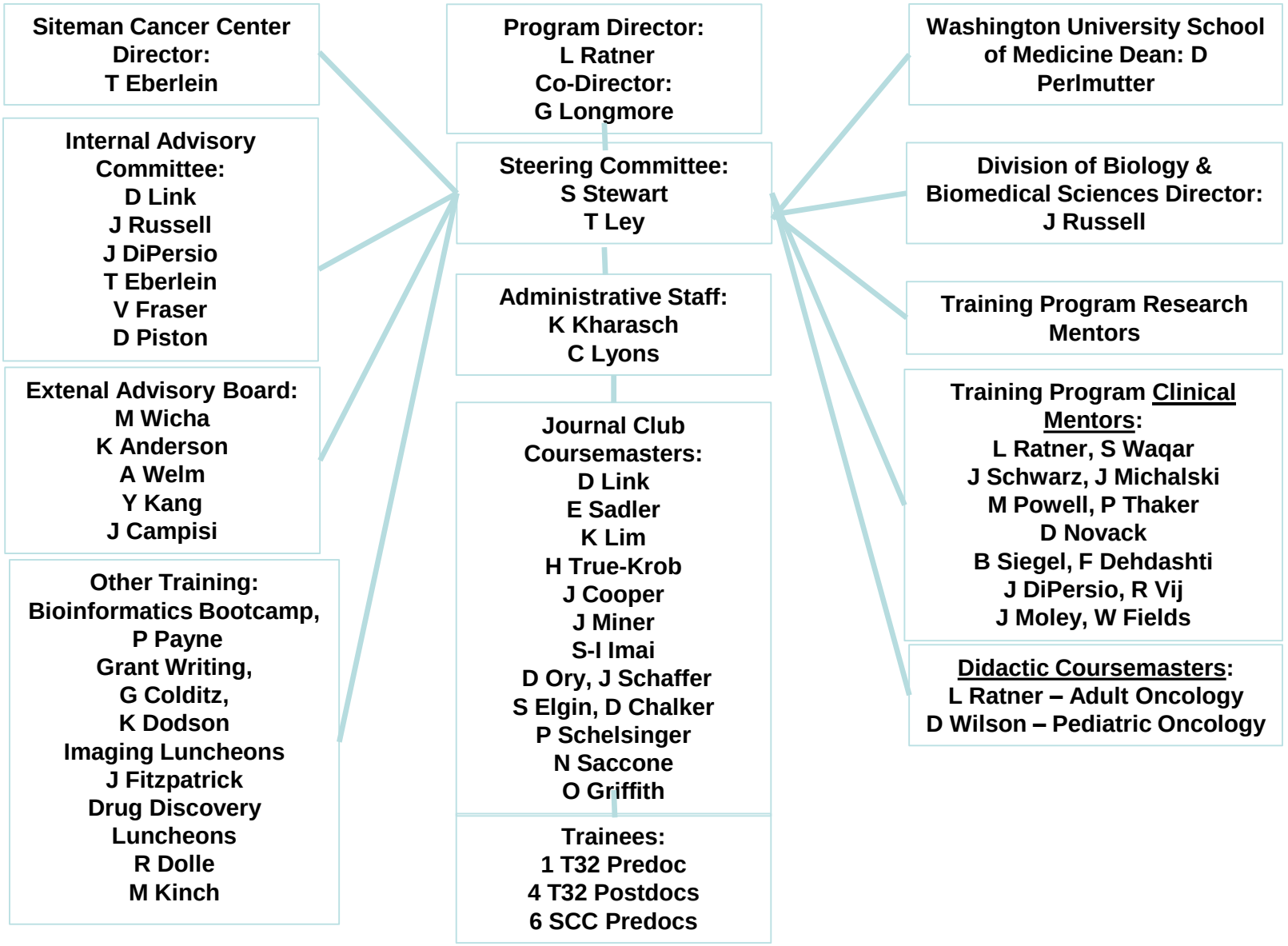
Broad Representation of Molecular Oncology Trainees

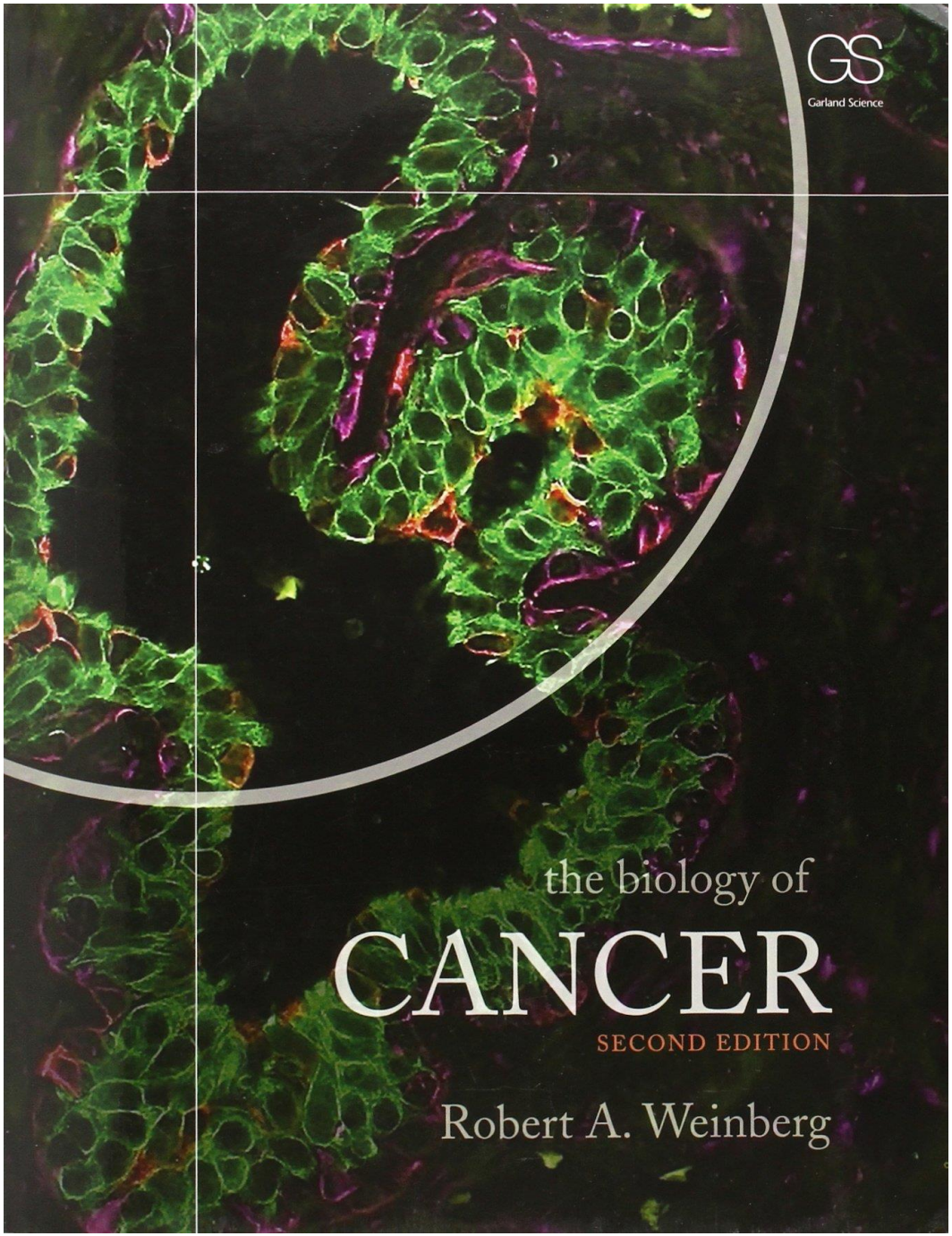


Recent Changes in Program

- Face-to-face ethics training required for trainees (PERCS)
- Visiting speaker/External advisor
- Research presentations by 2nd yr students & postdocs at luncheon
- Poster presentations by 1st yr students & postdocs at luncheon
- IDP Career-development plan
- Grant Writing
- Bioinformatics Bootcamp, Imaging & Drug Discovery Luncheons
- Career advice speaker at annual luncheon (if time permits)
- Administrative Changes
- Web-Based Surveys
- Training Grant Manual

Cancer Biology Administration




GS
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CANCER
SECOND EDITION
Robert A. Weinberg

Trainee Schedules		Average # of hrs/wk
Fall Semester, Year 1	Imaging Workshops	(8 hrs total)
	Journal Club	1
	Clinical Mentoring Program	1 (4 hrs once per mo)
	Other Lectures	1-2
	Laboratory Research	36
Spring Semester, Year 1	Grant Writing Workshop	(4 hrs total)
	Bioinformatics Bootcamp	20 hrs on one week
	Molecular Basis of Cancer Course (even years)	1.5
	Other Lectures	1-2
	Laboratory Research	36
Fall Semester, Year 2	Drug Discovery Workshops	(5 hrs total)
	Journal Club	1
	Clinical Mentoring Program	1 (4 hrs once per mo)
	Other Lectures	1-2
	Laboratory Research	36
Spring Semester, Year 2	Special Emphasis Pathway in Cancer Biology (odd years)	1.5
	Other Lectures	1-2
	Laboratory Research	36

Cancer Biology Pre-Doc Trainees

PreDoc Applicants Admitted in 2015

Simona Graziano	Gonzalo	SLU Biochem	3rd yr	VitD, 53BP1, PARP, & Breast Ca
Elizabeth Ostrander	Challen	Medicine	MolCellBio3rd yr	DNMT3a, Tet2, & AML

PreDoc Applicants Admitted in 2016

Jasmine Sponagel	Rubin	Pediatrics	MolCellBio2nd yr	mTOR Pathway in Sexual Differences in Glioblastoma
Katie Campbell	Griffith	Medicine	MolCellBio3rd yr	Landscape of HPV-Neg Oral Cancer
Jennifer Flynn	Wang	Genetics	ComSysBio3rd yr	Transposable Elements in Epigenomic Dysregulation
Jun-Chin Yao (Robin)	Link	Medicine	MolCellBio3rd yr	Stromal CXCL12 in MDS
Fiona Ruiz	Schwarz	Rad Onc	MolCellBio3rd yr	Cervical Cancer Genomics in Radiosensitivity

Cancer Biology Post-Doc Trainees

<u>PostDoc Applicants Admitted in 2015</u>			
Angela Halstead	Arora	Medicine	PPAR, RXRA, & bladder cancer
<u>PostDoc Applicants Admitted in 2016</u>			
Alex Wagner	Griffith	Genetics	Genome Interpretation Explorer
Craig Barcus	Longmore	Medicine	DDR2 in Breast Cancer Metastasis
<u>PostDoc Applicants Admitted in 2017</u>			
Bethany Prudner	vanTine/Held	Medicine	Oxidative Phosphorylation in Ras-Mediated Sarcoma

Journal Clubs & Coursemasters Participating In Molecular Oncology Training Program

Experimental Hematopoiesis Journal Club	Link
Cancer Biology Journal Club	Lim
Hematology & Oncology Journal Club	Sadler
Student-Run Cell Biology Journal Club	True-Krob
Cytoskeleton Discussion Group	Cooper
Cell Biology of Extracellular Matrix	Miner
Molecular Mechanism of Aging	Imai
RNA Biology	Ory/Schaffer
Chromatin, Epigenetics, Nuclear Organization	Elgin,Chalker
Structural Biology	Schlesinger
Human Genetics	Saccone
Cancer Informatics	Griffith

Clinical and Translational Mentoring Program

Clinical Mentoring Session	Clinical Mentors
Medical Oncology	Lee Ratner MD PhD Saima Waqar MD
Radiation Oncology	Julie Schwarz MD PhD Jeff Michalski MD MBA
Stem Cell Transplantation	John DiPersio MD PhD Ravi Vij MD
Gynecologic Oncology	Premal Thaker MD Matthew Powell MD
Surgical Oncology	Jeffrey Moley MD Ryan Fields MD
Oncologic Surgical Pathology	D Novack MD
Oncologic Radiology & Nuclear Medicine	Barry Siegel MD Farrokh Dehdashti MD

SPECIAL EMPHASIS PATHWAY IN CANCER BIOLOGY L41 5196 BIOL

This course is designed to present pre- and postdoctoral trainees with an organized educational format to explore major contemporary topics in cancer biology. The elective will provide an integrated view of cancer research including basic science, translational science, and clinical investigation. Approximately 60 minutes will be devoted to a didactic presentation by a faculty member with interaction by the participants. The remaining 30 minutes will be used to discuss a pivotal research paper from this field, preselected by the faculty member. Outside reading (30-60 min/week) will be required. 2 units.

Tuesdays 12:00p-1:30p January 10 through April 25, 2017
Location: 7th floor conference room of the Southwest Tower

Schedule

1.17.17	David DeNardo, PhD	Tumor microenvironment: mediator of disease progression & resistance
1.24.17	Grant Challen, PhD	Epigenetics in cancer pathogenesis
1.31.17	Joshua Rubin, MD, PhD	Sexual dimorphism in cancer pathogenesis
2.07.17	Laura Schuettpelz, MD	Toll signaling in normal and pathological hematopoiesis
2.14.17	Chris Sturgeon, PhD	iPSC models for the study of development and cancer
2.21.17	Todd Druley, MD, PhD	Germline variants and cancer
2.28.17	Karen Gauvain, MD	Novel interventions for management of brain tumors
3.07.17	Jason Mills, MD, PhD	Pathogenesis of gastric metaplasia and cancer
3.14.17	Spring Break	No Class
3.21.17	Jeff Bednarski, MD, PhD	DNA repair and oncogenesis
3.28.17	Jeff Magee, MD, PhD	Leukemogenesis
4.04.17	Brian van Tine, MD, PhD	Novel approaches to sarcoma therapy
4.11.17	Gavin Dunn, MD, PhD	Modeling glioblastoma multiforme
4.18.17	Student Invited Speaker	
4.25.17	Student Invited Speaker	

SAINT LOUIS UNIVERSITY
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SITEMAN CANCER CENTER
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Mechanisms of genome instability during oncogene-induced senescence

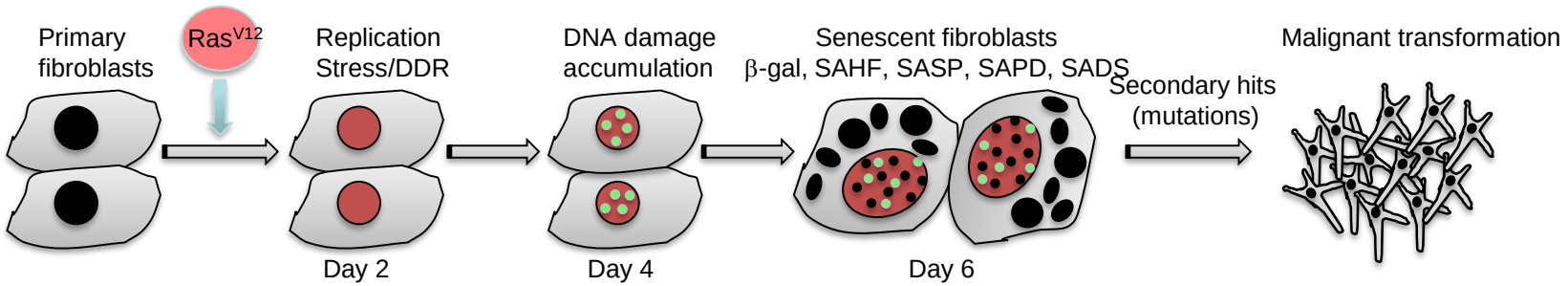
Siteman Cancer Center
Cancer Biology Pathway program 2017

Simona Graziano

Dpt of Biochemistry and Mol Biology, Saint Louis University School of Medicine

Jan 10th, 2017

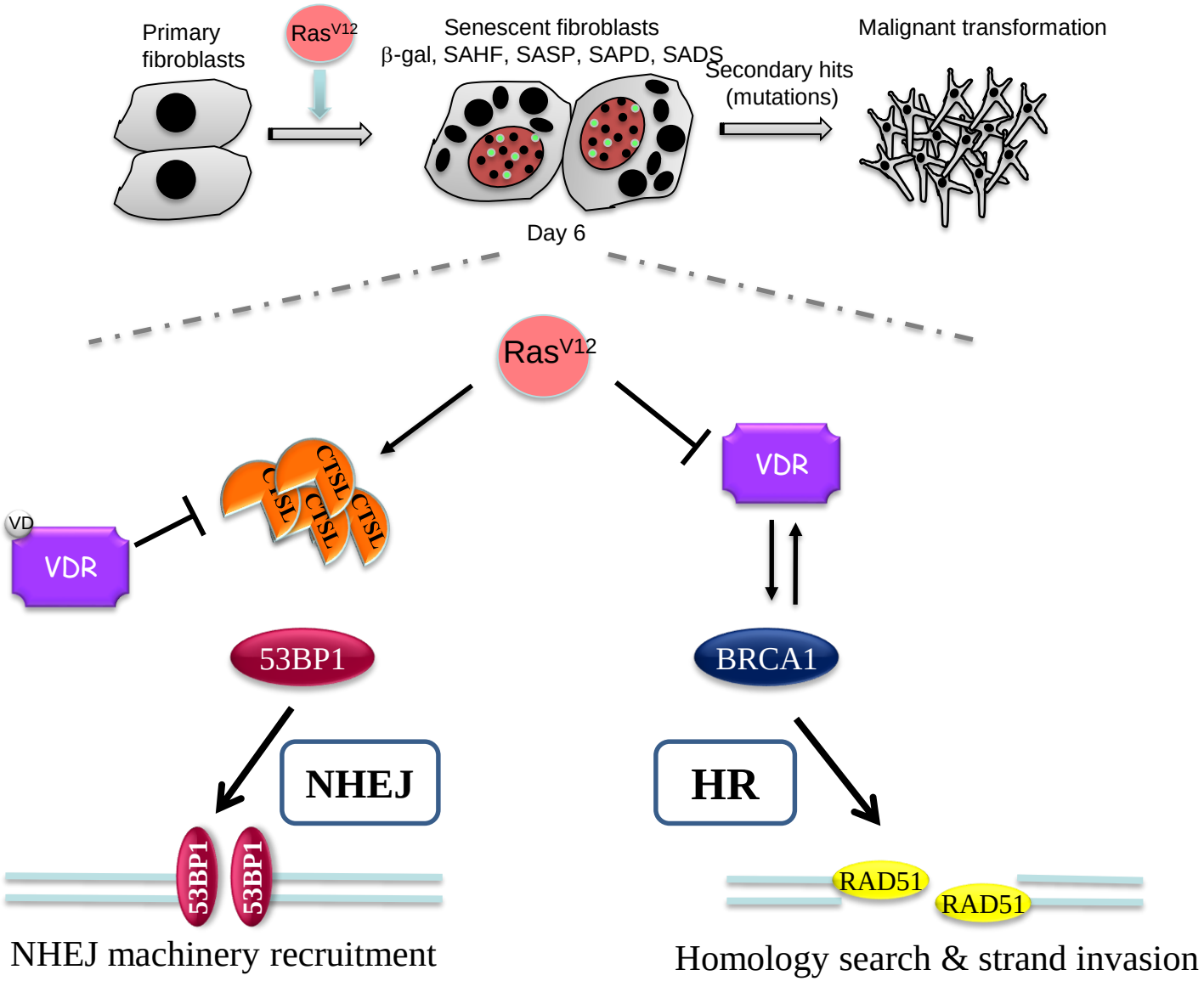
Oncogenic Ras-induced senescence



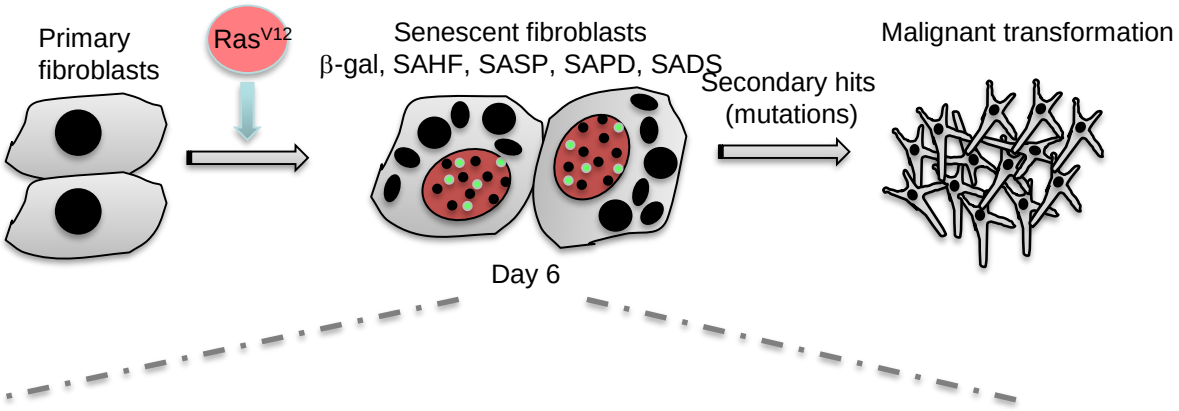
Irradiation of Ras-expressing cells during the mitotic phase results in senescence bypass and cellular transformation

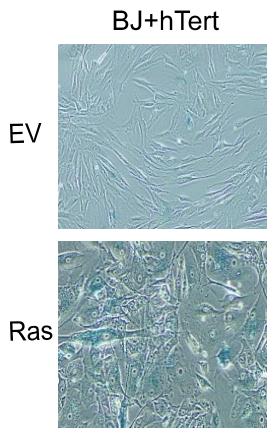
Why are these cells proficient in engaging the DDR but deficient in repairing DNA damage? What are the factors contributing to DNA repair deficiencies?

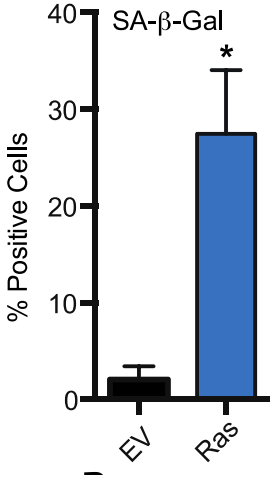
DNA repair factors and OIS

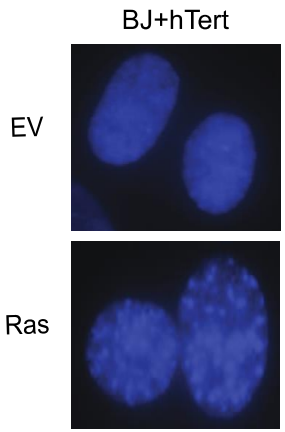


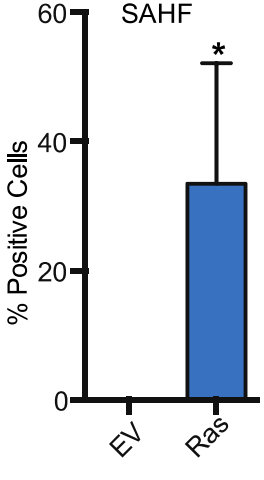
Hallmarks of OIS

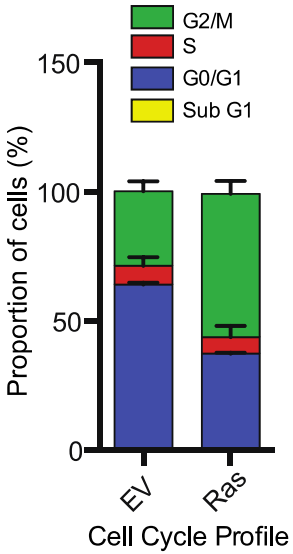




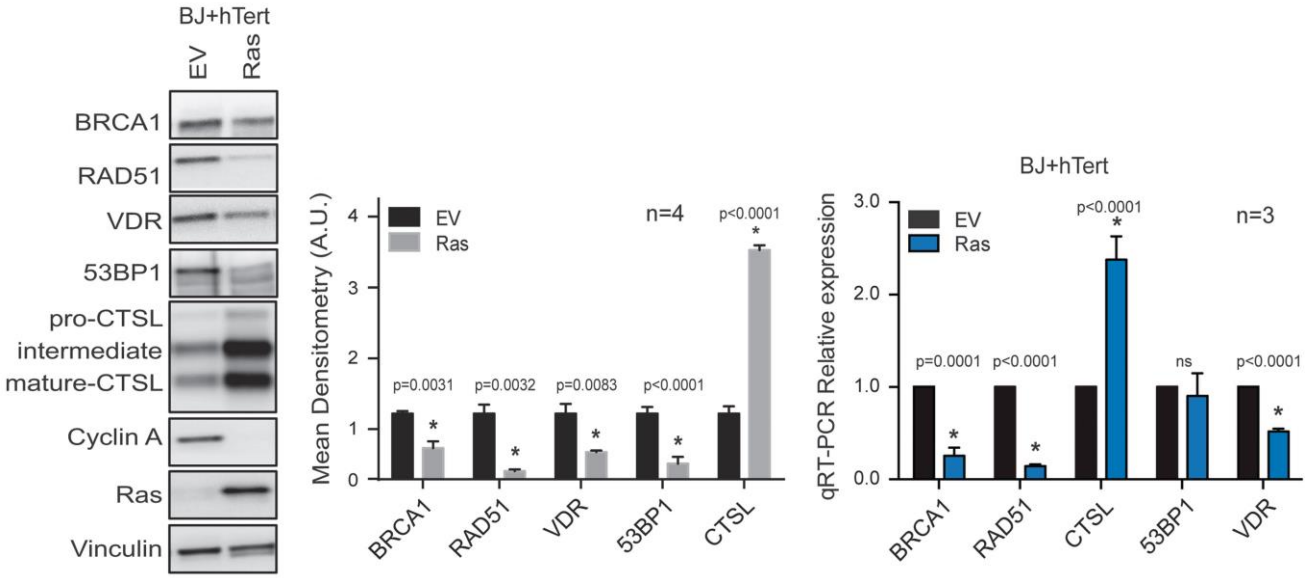






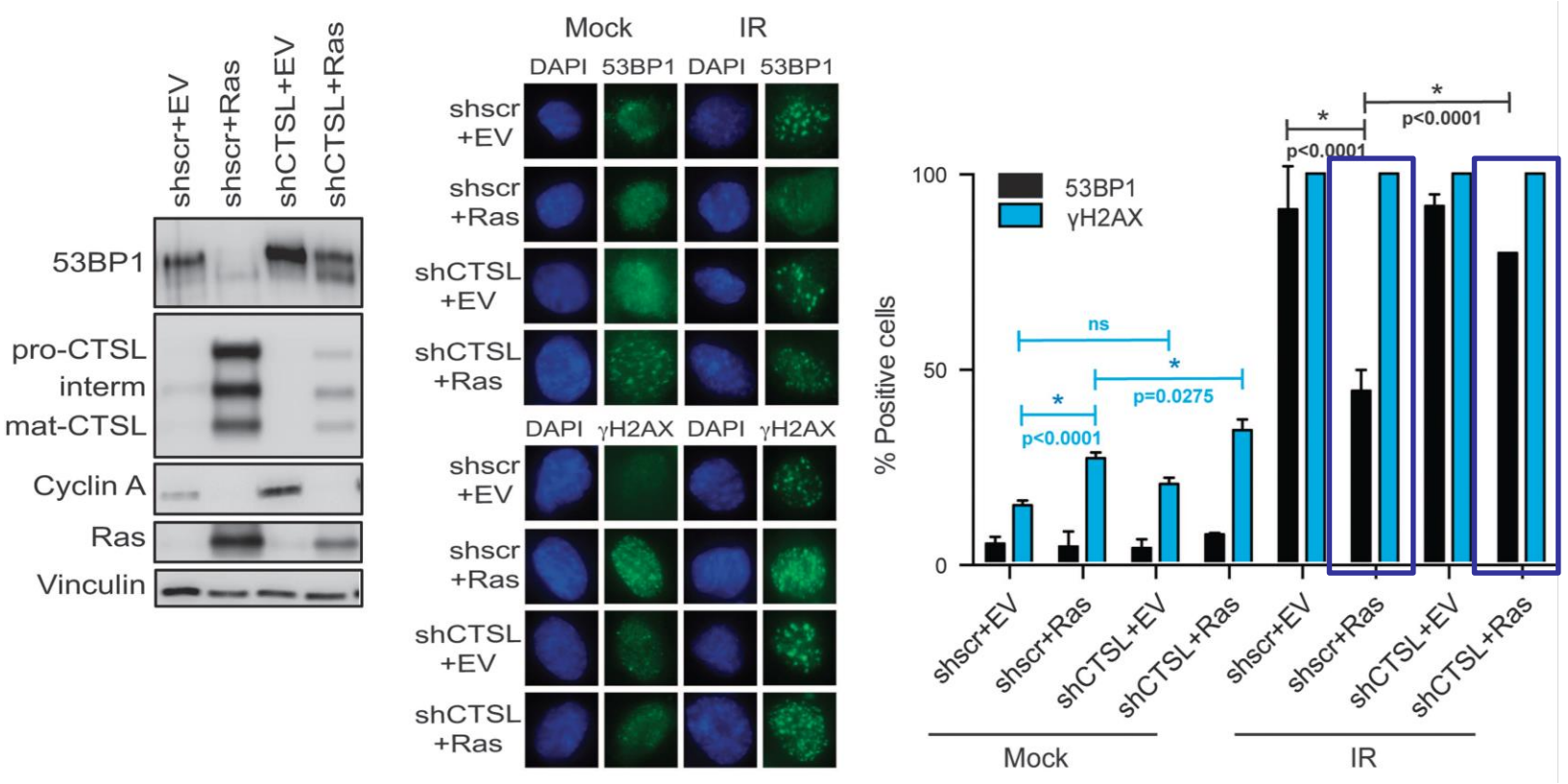


Ras senescent cells are deficient in BRCA1, 53BP1 and VDR

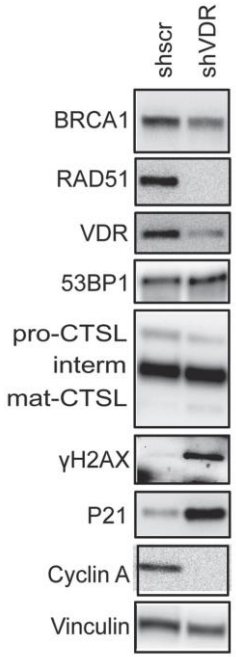


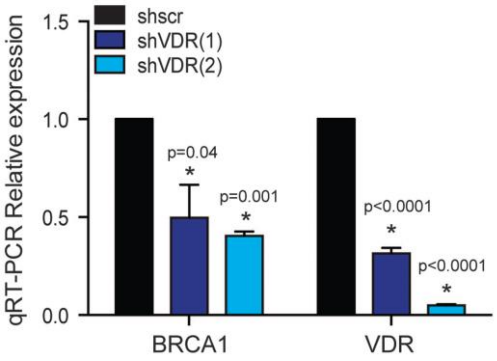
Through which regulatory mechanisms 53BP1 and BRCA1 are modulated during Oncogene-induced senescence?

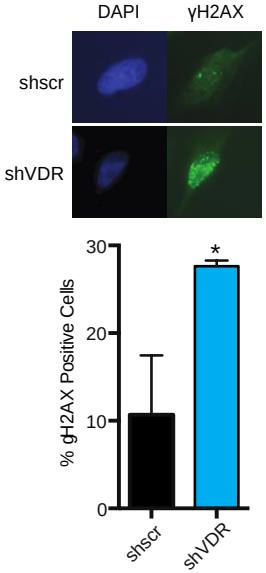
CTSL-mediated degradation of 53BP1 is activated during OIS

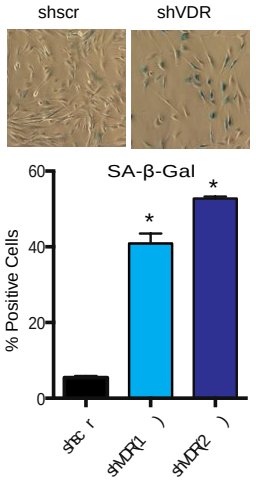


VDR depletion causes DNA damage and premature senescence

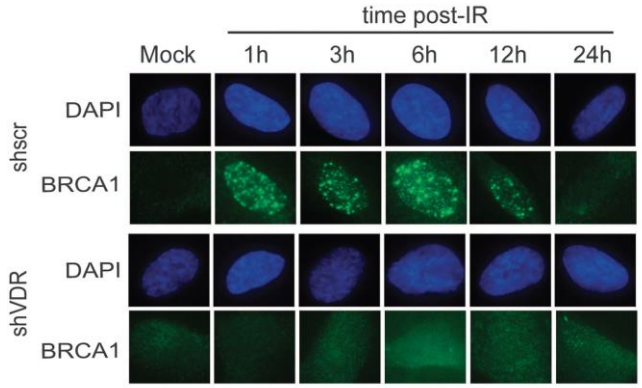


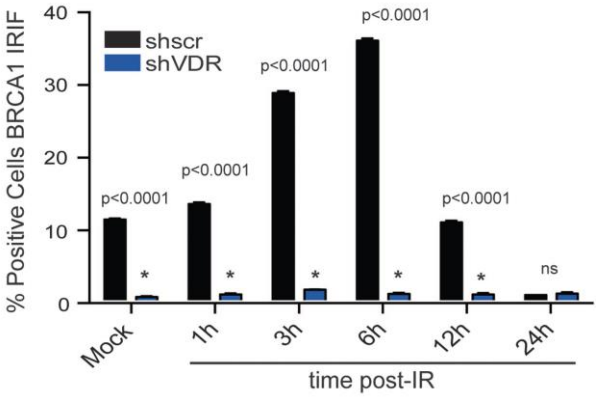


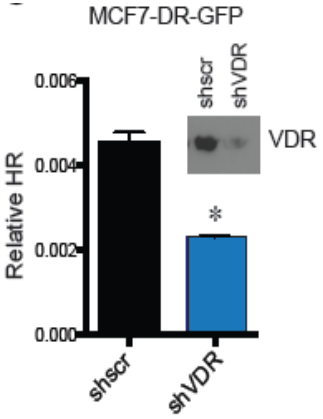




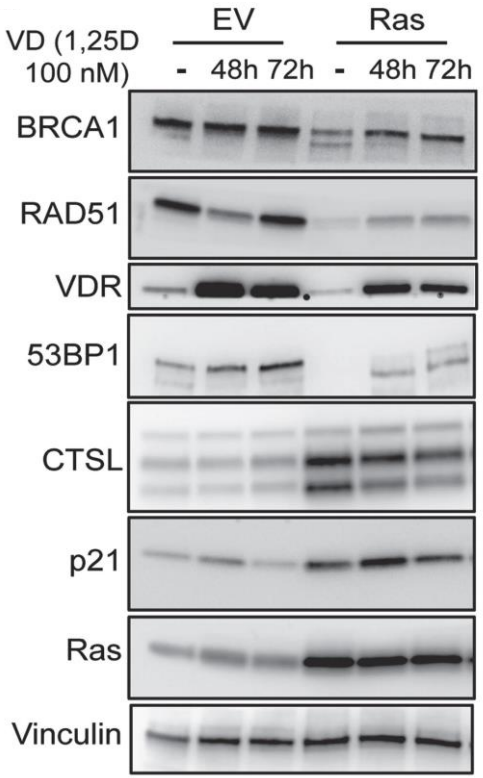
VDR depletion leads to BRCA1 loss of function and defective HR

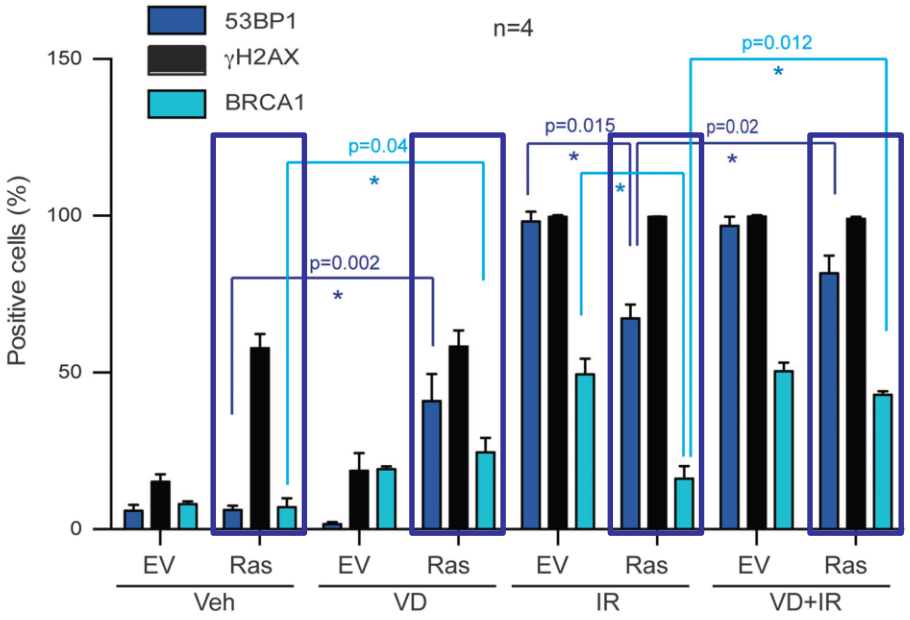




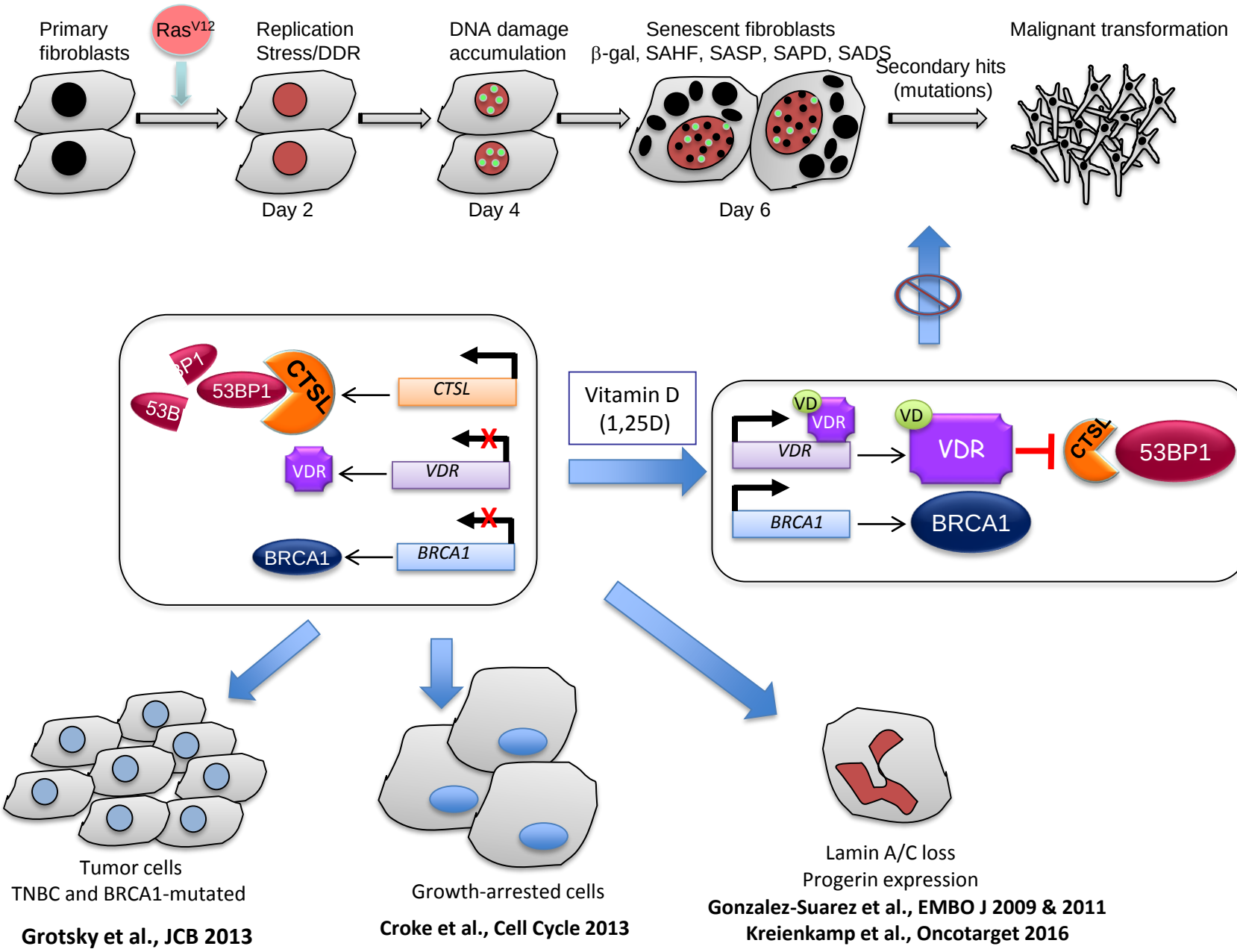


Vitamin D ameliorates DNA repair during OIS





Graziano et al., Oncogene 2016



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