

Curriculum Vitae: Scott Neal Keeney

Born: December 3, 1965, Baltimore, Maryland

Contact: Memorial Sloan Kettering Cancer Center
1275 York Avenue, Box 97
New York, NY 10065 USA
Tel: (212) 639-5182
Email: s-keeney@ski.mskcc.org
<http://www.ski.edu/keeney>

Education

1987 Virginia Polytechnic Institute and State University
B.S. Biochemistry, Blacksburg, VA

1993 University of California
Ph.D. Biochemistry, Berkeley, CA
Advisor: Prof. Stuart Linn

Postdoctoral Training

1993-1997 Department of Molecular and Cellular Biology
Harvard University, Cambridge, MA
Advisor: Prof. Nancy Kleckner

Positions and Appointments

Sept. 1997–present Molecular Biology Program, Memorial Sloan Kettering Cancer Center.
Assistant Member (1997–2004), Associate Member (2004–2006),
Member (2006–present).

Jan. 1998–present Molecular Biology Program and Biochemistry and Structural Biology
Program, Weill Graduate School of Medical Sciences, Cornell University.
Assistant Professor (1998–2005), Associate Professor (2005–2007),
Professor (2007–present), Co-Director, BCMB Allied Graduate Programs
(2007–2010).

Sept. 2006–present Gerstner Sloan Kettering Graduate School of Biomedical Sciences.
Associate Professor (9/2006–11/2006), Professor (11/2006–present).

Aug. 2008–present Investigator, Howard Hughes Medical Institute

Honors and Awards

1983 Marshall Hahn Scholarship
1983-1987 National Merit Award Scholarship
1986 Phi Beta Kappa

1987	James Lewis Howe Undergraduate Research Award, Blue Ridge Section of the American Chemical Society
1987	B.S., <i>summa cum laude</i> , in honors, Virginia Tech
1987-1988	University of California Regents Fellowship
1988-1991	National Science Foundation Graduate Fellowship
1994-1997	Fellow, Damon Runyon-Walter Winchell Foundation
1998-2001	Awardee, NY City Council Speaker's Fund for Biomedical Research
2004	Louise and Allston Boyer Young Investigator Award, MSKCC
2005-2010	Leukemia and Lymphoma Society Scholar
2007	Finalist, Blavatnik Young Scientist Award, NY Academy of Sciences
2008	Investigator, Howard Hughes Medical Institute
2012	Clayton S. White Endowed Lecture, Oklahoma Medical Research Foundation
2013	Keynote Speaker, University of Iowa Genetics PhD Program Retreat
2014	Keynote Speaker, Abcam Recombination Meeting celebrating the 50 th anniversary of the Holliday model
2014	Elected, Fellow of the American Academy of Microbiology

Scientific Societies

Genetics Society of America, American Academy of Microbiology, American Society for Biochemistry and Molecular Biology, American Society for Microbiology, Harvey Society, NY Academy of Sciences, Faculty of 1000

Mentorship

PhD Students:

Completed dissertations in my laboratory (current position indicated) (10 total):

Kehkooi Kee (Associate Prof., Tsinghua University, Beijing)
 Charanjit Arora (Attorney, UCLA)
 Kiersten Henderson (postdoc, Fred Hutchinson Cancer Research Center)
 James Dowdle (postdoc, Ohio State Univ)
 Mariko Sasaki (postdoc, Tokyo University, Japan)
 Drew Thacker (postdoc, UCSF)
 Ryan Kniewel (postdoc, Univ. of Madrid, Spain)
 Sam Globus (Director of Scientific Operations, Celmatix)
 Xuan Zhu (pursuing M.S. in Computer Science)
 Isabel Lam (postdoc, Whitehead Inst, beginning 8/2016)

Current (4 total): Pei-Ching Huang, Mehmet Erman Karasu, Xiaojing Mu, Sam Tischfield

Postdoctoral Fellows:

Past (current position indicated) (14 total):

Shohreh Maleki PhD (Research Asst. Prof., Karolinska Instit., Stockholm, Sweden);
 Emmanuelle Martini PhD (Permanent position, CEA, France);
 Monica DiGiacomo PhD (Postdoc, EMBL Rome);
 Takashi Okada MD PhD (Asst. Prof., Dept of Urology, Ijinkai-Takeda General Hospital, Kyoto, Japan);
 Matthew Neale PhD (Royal Society Fellow, Genome Stability Centre, Univ Sussex, UK);

Jing Pan PhD (Lecturer, University of Texas, Dallas);
Ignasi Roig PhD (Assistant Prof., Univ. Auton. Barcelona, Spain);
Viji Subramanian PhD (postdoc, NYU);
Esther de Boer PhD (Senior Research Scientist, Inst. Of Life Science, Univ. of Amsterdam);
Liisa Kauppi PhD (Group Leader, Univ. Helsinki);
Megan van Overbeek PhD (Staff Researcher, Caribou Biosciences, Berkeley CA);
Monika Mehta PhD (R&D Scientist, Frederick National Laboratory, NCI)
Neeman Mohibullah PhD (Staff Scientist, Integrated Genomics Operation, MSKCC);
Julian Lange PhD

Current (graduate institution and postdoctoral fellowship information indicated) (11 total):

Laurent Acquaviva PhD (Aix-Marseille University, France; Lalor Foundation Fellowship);
Corentin Claeys Bouuaert PhD (Univ. of Nottingham, UK);
Devanshi Jain PhD (London Res. Inst. CRUK; Human Frontiers Science Program Fellowship);
Seoyoung Kim PhD (Univ. of Oklahoma Health Sciences Center; Leukemia and Lymphoma Society Fellowship);
Soonjoung Kim PhD (Univ Texas Southwestern);
Elena Mimitou PhD (Columbia University; Helen Hay Whitney Fellowship);
Hajime Murakami PhD (Saitama University, Japan);
David Ontoso Picon PhD (Univ. of Salamanca, Spain);
Shintaro Yamada PhD (University of Tokyo)
Michiel Boekhout PhD (University of Amsterdam, Netherlands)
George Chung PhD (University of British Columbia, Canada)

Undergraduates (11 total):

Via the MSKCC Summer Undergraduate Research Program or HHMI EXROP
(Subsequent training and current position indicated)

Marc Waase, Cornell University, 1999 (MD PhD, Cornell/Rockefeller; Residency: Internal Medicine, NY Presbyterian Hospital; currently a Cardiology Fellow, NYPH)
Steven Quatela, Haverford College, 1999 (MD PhD, NYU; currently Clinical Fellow in Pediatric Hematology/Oncology, MSKCC)
Zareen Gauhar, Mount Holyoke College, Springfield MA, 2000 (PhD, Yale Med; currently Senior Scientific Director at Discovery USA)
Jennie Hann, Stanford University, 2002 (currently a PhD candidate in English, Johns Hopkins University)
Tara Berman, University of Pennsylvania, 2004, 2005 (MD Tel Aviv Univ; currently an Internal Medicine Resident, St Luke's-Roosevelt Hospital)
Alanna Li, Cornell University, 2007 (DDS 2014, Columbia Dental School; in private practice)
Meredith Spadaccia, University of Maryland, 2008 (currently a Research Technician, Mt Sinai)
Adolfo Cuesta, Haverford College, 2009 (currently a Research Technician, NYU)
Leslie Higueta-Montoya, Furman University, 2011 (currently in MPH program, Mt Sinai)
Danté Johnson, Louisiana State University, 2013 (RD&E Intern, SC Johnson)
Tomás Rodriguez, UC Davis, 2014 (MD PhD program, UMass Worcester)

Institutional Service

MSKCC:

1998–2006	Molecular Biology Seminar Committee
2008–2013	MSKCC Committee on Appointments and Promotions
2008–2014	Sloan Kettering Institute Committee on Appointments and Promotions
2009–present	Postdoc/Faculty Forum, “Chalk Talk Tips”
2010–present	Oversight Committee, Genomics Core Laboratory,
2011	Chair, MSKCC Task Force on Genomics and Proteomics
2013–2016	Chair, Oversight Committee, Proteomics Core Facility

Graduate Education:

2007–2010 Co-Director, Biochemistry and Cell & Molecular Biology (BCMB) Allied Programs
 2003–2007 BCMB First Year Advisor
 GSK First Year Mentor: Eric Alonso, Elizabeth Wasmuth, Yvonne Gruber, Chong Luo, Miguel Roman

Teaching:

2005–2008	Weill BCMB, Molecular Genetics Course Director
1998–present	Weill BCMB, Molecular Genetics Course, 2–3 lectures per year
1998–2005	Weill BCMB, Gene Structure and Function (2 lectures per year)
1998, 2000, 2002	Weill BCMB, Nucleic Acids Enzymology (3–6 lectures per year)
2006	Weill BCMB Focus Group, “Meiosis”
2006–present	GSK Core Course, 2-6 lectures per year

Committees:

1997–2007	Weill BCMB Retreat Committee
1999–2003, 2006	Weill BCMB ACE Committee
2004–2010	Weill BCMB Curriculum Committee
2007–2012	Weill BCMB Admissions Committee
2013	Search Committee, Weill Graduate School Dean
2014–present	GSK Graduate Admissions Committee

Thesis and thesis-defense committees:

Weill/Cornell: (partial listing from **> 30 total**) Pearl Chang, Liwei Xu, Karen Lee, Jale Refik-Rogers, Ligeng Tian, Chonghui Chen, Chunling Gong, Rob Gillespie, Ryan Heller, Yun Jiang, Hilary Gerber, Claudio Alarcon, Kelly Yule George, Carrie Adelman, Jan Theunissen, Borko Amulic, Ram Madabhushi, Jennifer Lee, Jaclyn Gareau, Sohini Sanyal, Yu-Hung (Jeff) Chen, Cristina GhenoIU, Ryo Hayama, Zhenjian Cai, Emily Bauer, Ying Liu, Min Hsu, Zhicheng (Ray) Qiu, Sujan Devbhandari, James Bellush, Erika Buechelmaier
 GSK (**5 total**): Muge Akpinar, Sadia Rahman, Elizabeth Wasmuth, Lei Wei, Weiran Feng
 MD/PhD Program (**4 total**): Tom Nguyen, Josh Silverman, Isaac Klein, Xiao Peng
 External (**5 total**): Angelique Girard (Greg Hannon lab, Cold Spring Harbor); Tracy Callender (Nancy Hollingsworth lab, Stonybrook University); Huei-Mei Chen (Janet Leatherwood lab, Stonybrook University); Boubou Diagouraga (Bernard de Massy lab, IGH Montpellier, France); Jonna Heldrich (Andreas Hochwagen lab, NYU)

Extramural Service

Editorial Review:

Genetics (Associate Editor 2007–2011)

Genes to Cells (Associate Editor 2003–present)

Chromosoma (Associate Editor 2006–present)

Journal of Cell Biology (Editorial Board 2015–present)

Ad hoc reviewer (partial listing): *Cell*, *Chromosoma*, *Current Biology*, *Developmental Cell*, *EMBO Journal*, *Genetics*, *Genes & Development*, *Genome Research*, *International Journal of Andrology*, *Journal of Biological Chemistry*, *Journal of Cell Biology*, *Journal of Cell Science*, *Molecular Cell*, *Molecular and Cellular Biology*, *Nature*, *Nature Genetics*, *Nature Structural and Molecular Biology*, *Nucleic Acids Research*, *Proceedings of the National Academy of Science USA*, *Science*, *PLoS Biology*, *PLoS Genetics*, *Trends in Genetics*

Conference organization:

Meiosis Gordon Conference (vice-Chair 2006; Chair 2008)

FASEB Yeast Chromosomes Conference (co-Organizer 2012)

3R Meeting, Japan (Member of foreign advisory board 2012, 2014, 2016)

NY Academy of Sciences Genome Integrity Discussion Group (co-Organizer, 2014–present)

Workshop co-organizer, 2016 ASCB Meeting, San Francisco

Keystone Symposium on Replication and Recombination (co-Organizer, 2017)

FASEB Conference on Genetic Recombination and Genome Rearrangements (vice-Chair 2017; Chair 2019)

Grant Reviews:

Genetic Mechanisms of Cancer Committee, American Cancer Society (6/2003–6/2007)

NIH Molecular Genetics A (MGA) study section (ad hoc 10/2007, regular member 10/2008–6/2012, ad hoc 10/2015)

NIGMS Council, Ad Hoc Consultant, 5/2013

NIH ZRG1 GGG F(80) (R15 study section), 3/2015

NIH ZHD1 DSR0L JS 1 (P01 review panel), 6/2015

ZRG1 BCMB-A, 2/2016

ZES1 LWJ-J (K) 1 (K99 review panel), 3/2016

Ad hoc reviewer (partial listing): European Research Council; Cancer Research UK (Review Panel Member, 9/2014); NIH Nuclear Dynamics and Transport study section (NDT, 6/2006, 2/2008), NSF, Israel Science Foundation, Marathon (Italy), Austrian Science Fund, Council for Chemical Sciences of the Netherlands Organisation for Scientific Research, Wellcome Trust (U.K.), Swiss National Science Foundation, New Jersey Commission on Cancer Research.

Invited Talks

Conferences (partial listing, 2011–present):

FASEB Recombination Meeting (Colorado, 7/2011)

EMBO Meiosis Meeting (Italy, 9/2011)

Meiosis Gordon Conference (New London, NH, 6/2012)

EMBO Workshop on Recombination (Spain 5/2012)

FASEB Yeast Chromosomes (Colorado 7/2012 (Co-Organizer))

Nucleic Acids Gordon Conference (Maine, 6/2011)
 TOPO2011, Topoisomerase Meeting (Taipei, Taiwan 10/2011)
 German Society for Cell Biology (Dresden, Germany 3/2012)
 Royal Society International Meeting on Recombination (Chichester UK 11/2012)
 3R Meeting (Member of foreign advisory board; Awaji Island Japan 11/2012)
 Symposium in honor of Paul Burgoyne (NIMR, London 1/2013)
 XXII North American Testis Workshop (San Antonio TX 4/2013)
 Chromosome Dynamics Gordon Conference; Keynote speaker, Gordon Research Seminar (Il Ciocco Italy, 5/2013)
 Symposium in honor of Jim Haber (Brandeis Univ, Waltham MA, 6/2013)
 FASEB Recombination Meeting (Colorado, 7/2013)
 Wenner-Gren Foundation Symposium on Mammalian Meiosis (Stockholm 8/2013)
 EMBO Meiosis Meeting (Dresden, Germany 9/2013)
 Abcam Recombination Meeting, Alicante Spain, 5/2014 (keynote speaker)
 Meiosis Gordon Conference (New London, NH, 6/2014)
 FASEB Yeast Chromosomes (Colorado, 7/2014)
 3R Meeting (Member of foreign advisory board; Hakone Japan 11/2014)
 Joint Keystone Symposia on DNA Replication and Recombination/Genomic Instability and DNA Repair (Whistler, Canada, 3/2015)
 80th Cold Spring Harbor Laboratory Symposium on Quantitative Biology (CSHL, 5/2015)
 Ramon Areces Foundation Symposium on Meiosis (Salamanca, Spain, 6/2015)
 Gordon Research Conference on Chromosome Dynamics (New Hampshire 6/2015)
 FASEB Recombination Meeting (Steamboat Springs, CO, 7/2015)
 EMBO Meiosis Meeting (Oxford UK, 9/2015)
 10th Quinquennial Conf. on Responses to DNA Damage (Egmond aan Zee, Netherlands, 4/2016)
 Abcam Recombination Meeting (Alicante Spain, 5/2016)
 Meiosis Gordon Conference (New London, NH, 6/2016)
 Topoisomerase Gordon Conference (Sunday River, ME, 8/2016)
 Workshop on the Molecular and Physical Biology of Chromosomes (Marine Biological Laboratory, 9/2016)

 Future: SKLRB Symposium on Frontiers in Reproductive Biology (Beijing, 10/2016); 3R Meeting (Matsue Japan, 11/2016); Chromosome Stability Meeting (Trivandrum Kerala, India, 12/2016); Keystone Replication and Recombination Meeting (Santa Fe, NM, 4/2017); Meiosis Conference (Fondation des Treilles, France, 5/2017); Chromosome Dynamics Gordon Conference (Il Ciocco, Italy, 5/2017); FASEB Recombination Meeting (Steamboat Springs, CO, 7/2017); EMBO Meiosis Meeting (Hvar, Croatia, 8/2017)

Seminars (partial listing, 2011–present): UC Santa Cruz, Dept of MC&DB, 1/24/11; McGill University, 3/14/11; Univ. Rome Tor Vergata, 9/16/11; National Inst. of Health, 10/5/11; Stanford University, 2/15/12; Oklahoma Medical Research Foundation, 3/8/12; University of Salamanca, Spain, 5/14/12; London Research Institute, Cancer Research UK, 11/7/12; Genome Stability Center, Univ. Sussex UK, 11/8/12; Hunter College, 11/12/12; National Inst. Of Genetics, Mishima Japan, 11/22/12; UC San Diego, 2/14/13; Cornell Univ., Mol Bio & Genetics, 3/29/13; MD Anderson Smithville TX, 4/8/13; Harvard Med. School Dept. of Genetics, 6/12/13; University of Helsinki, 9/3/13; University of Iowa Graduate Student Retreat (Keynote speaker), 10/11/13; Virginia Tech, 11/8/13; University of Vienna, 5/15/14; University of Colorado Medical School, Denver, 9/17/14; University of Colorado Boulder, 9/18/14; Columbia Univ Biological Sciences,

9/29/14; Columbia Physicians and Surgeons, Dept of Genetics, 11/11/14; Osaka University, Japan, 11/14/14; Rockefeller Univ., 12/17/14; Cold Spring Harbor Laboratory, 12/18/14; Institut Curie, Paris, 9/7/15; NIH NIDDK, 10/20/15; ETH Zurich, 11/9/15; FMRI Basel, 11/10/15; CEA Fontenay Aux Roses, France, 12/14/15; IGH Montpellier, France, 12/16/15; INSERM Marseille, 12/17/15; Johns Hopkins Biochem and Mol Bio, 9/26/16. Future: Tsinghua Univ, Beijing 10/24/16; Univ. Illinois Urbana, 2/1/17.

Research Support

Howard Hughes Medical Institute, 8/1/2008–present

R35 GM118092 (Keeney, PI), 5/1/2016–4/30/2021, “Mechanism and regulation of meiotic recombination.”

R01 GM058673 (Keeney, PI), 1/1/1999–3/31/2017, “Mechanism of meiotic recombination initiation in yeast.” (no-cost extension)

R01 GM105421 (formerly HD40916; M. Jasin, mPI; Keeney, mPI), 8/15/2001–12/31/2016, “Role of Spo11 and recombination in mouse meiosis.”

Publications

1. Nishida C, Choi SY, Kim J, Keeney S, and Linn S. (1988) DNA polymerase δ plus HeLa or human fibroblast cell-free extracts complement permeabilized xeroderma pigmentosum fibroblasts: Application for purification of repair factors, in: E.C. Friedberg and P.C. Hanawalt (Eds.), *Mechanisms and Consequences of DNA Damage Processing*, Liss, New York, pp.337-341.
2. Keeney S, and Linn S. (1990) A critical review of permeabilized cell systems for studying mammalian DNA repair. *Mutat. Res.* **236**:239-252.
3. Juan JY, Keeney SN, and Gregory EM. (1991) Reconstitution of the *Deinococcus radiodurans* aposuperoxide dismutase. *Arch. Biochem. Biophys.* **286**:257-263.
4. Keeney S, Wein H, and Linn S. (1992) Biochemical heterogeneity in xeroderma pigmentosum complementation group E. *Mutat. Res.* **273**:49-56.
5. Keeney S., Chang GJ, and Linn S. (1993) Characterization of a human DNA damage binding protein implicated in xeroderma pigmentosum E. *J. Biol. Chem.* **268**:21293-21300.
6. Reardon JT, Nichols AF, Keeney S, Smith CA, Taylor JS, Linn S, and Sancar A. (1993) Comparative analysis of binding of human damaged DNA-binding protein (XP-E) and *Escherichia coli* damage recognition protein (UvrA) to the major ultraviolet photoproducts: T[c,s]T, T[t,s]T, T[6,4]T, and T[Dewar]T. *J. Biol. Chem.* **268**:21301-21308.
7. Keeney S, Eker APM, Vermeulen W, Brody T, Hoeijmakers, JHJ, Bootsma D, and Linn S. (1994) Correction of the DNA repair defect in xeroderma pigmentosum E by injection of a DNA damage binding protein. *Proc. Natl. Acad. Sci. USA* **91**:4053-4056.
8. Dualan, R, Brody T, Keeney S, Nichols AF, Admon A, and Linn S. (1995) Chromosomal localization and cDNA cloning of the genes (DDB1 and DDB2) for the p127 and p48 subunits of a human damage-specific DNA binding protein. *Genomics* **29**:62-69.
9. Keeney S, and Kleckner N. (1995) Covalent protein-DNA complexes at the 5' strand termini of meiosis-specific double-strand breaks in yeast. *Proc. Natl. Acad. Sci. USA* **92**:11274-11278.

10. Vaisman A, Keeney S, Nichols AF, Linn S, and Chaney SG. (1996) Cisplatin-induced alterations in the expression of the mRNAs for UV-damage recognition protein. *Oncol. Res.* **8**:7-12.
11. Keeney S, and Kleckner N. (1996) Communication between homologous chromosomes: genetic alterations at a nuclease-hypersensitive site can alter mitotic chromatin structure at that site both in *cis* and in *trans*. *Genes Cells* **1**:475-489.
12. Keeney S, Giroux CN, and Kleckner N. (1997) Meiosis-specific DNA double-strand breaks are catalyzed by Spo11, a member of a widely conserved protein family. *Cell* **88**:375-384.
13. *Keeney S, Baudat F, Angeles M, Zhou Z-H, Copeland NG, Jenkins NA, Manova K, and *Jasin M. (1999) A mouse homolog of the *Saccharomyces cerevisiae* meiotic recombination DNA transesterase Spo11p. *Genomics* **61**, 170-182. *Corresponding authors.
14. Cha RS, Weiner BM, Keeney S, Dekker J, and Kleckner N (2000) Progression of meiotic DNA replication is modulated by interchromosomal interaction proteins, negatively by Spo11p and positively by Rec8p. *Genes Dev.* **14**, 493-503.
15. Keeney S (2000) Meiotic machinations (News and Views). *Nat. Genet.* **25**, 248.
16. Baudat F, Manova K, Yuen JP, *Jasin M, and *Keeney S (2000) Chromosome synapsis defects and sexually dimorphic meiotic progression in mice lacking Spo11. *Mol. Cell* **6**, 989-998. *Corresponding authors.
17. Baudat F, and Keeney S. (2001) Meiotic recombination: Making and breaking go hand in hand. (Preview). *Curr. Biol.*, **11**: R45-R48.
18. Mahadevaiah SK, Turner JMA, Baudat F, Rogakou EP, de Boer P, Blanco-Rodriguez J, Jasin M, Keeney S, Bonner WM, and Burgoyne PS (2001) Recombinational DNA double strand breaks in mice precede synapsis. *Nat. Genet.* **27**, 271-276.
19. Keeney S (2001) Mechanism and control of meiotic recombination initiation. *Curr. Top. Dev. Biol.* **52**, 1-53.
20. Klein U, Esposito G, Baudat F, *Keeney S, and *Jasin M. (2002) Mice deficient for the topoisomerase II-like DNA transesterase Spo11 show normal immunoglobulin somatic hypermutation and class switching. *Eur. J. Immunol.* **32**, 316-321. *Corresponding authors.
21. Kee K, and Keeney S. (2002) Functional interactions between *SPO11* and *REC102* during initiation of meiotic recombination in *Saccharomyces cerevisiae*. *Genetics* **160**, 111-122.
22. Diaz RL, Alcid AD, Berger JM, and Keeney S. (2002) Identification of residues in yeast Spo11p critical for meiotic DNA double-strand break formation. *Mol. Cell. Biol.* **22**, 1106-1115.
23. Martini E, Keeney S, and Osley MA (2002) A role for histone H2B during UV-induced DNA repair in *Saccharomyces cerevisiae*. *Genetics* **160**, 1375-1387.
24. Martini, E, and Keeney, S. (2002) Sex and the single (double-strand) break. (Preview) *Mol. Cell* **9**, 700-702
25. Arora C, Kee K, Maleki S, and Keeney S (2004) Antiviral protein Ski8 is a direct partner of Spo11 in meiotic double-strand break formation, independent of its cytoplasmic role in RNA metabolism. *Mol. Cell* **13**, 549-559.
26. Henderson KA, and Keeney S (2004) Tying synaptonemal complex initiation to the formation and programmed repair of DNA double-strand breaks. *Proc. Natl. Acad. Sci. USA* **101**, 4519-4524.

27. Kee K, Protacio RU, Arora C, and Keeney S (2004) Spatial organization and dynamics of the association of Rec102 and Rec104 with meiotic chromosomes. *EMBO J.* **23**, 1815-1824.
28. Kauppi L, Jeffreys AJ, and Keeney S (2004) Where the crossovers are: Recombination distributions in mammals. *Nature Rev. Genet.* **5**, 413-424.
29. Maleki S, and Keeney S (2004) Modifying histones and initiating meiotic recombination: New answers to an old question. (Preview) *Cell* **118**, 404-406.
30. Di Giacomo M, Barchi M, Baudat F, Edelmann W, *Keeney S, and *Jasin M (2005) Distinct DNA damage-dependent and independent responses drive the loss of oocytes in recombination-defective mouse mutants. *Proc. Natl. Acad. Sci. USA* **102**, 737-742. *Corresponding authors. PMC545532
31. Okada T, and Keeney S (2005) Homologous recombination: Needing to have my say. (Dispatch) *Curr. Biol.* **15**, R200-R202.
32. Ahn S-H, Henderson KA, Keeney S, and Allis CD (2005) H2B (Ser10) phosphorylation is induced during apoptosis and meiosis in *S. cerevisiae*. *Cell Cycle* **4**, 780-783.
33. Barchi M, Mahadevaiah S, Di Giacomo M, Baudat F, de Rooij DG, Burgoyne PS, *Jasin M, and *Keeney S (2005). Surveillance of different recombination defects in mouse spermatocytes yields distinct responses despite elimination at an identical developmental stage. *Mol. Cell. Biol.* **25**, 7203-7215. *Corresponding authors. PMC1190256
34. Neale MJ, Pan J, and Keeney S (2005) Endonucleolytic processing of covalent protein-linked DNA double-strand breaks. *Nature* **436**, 1053-1057.
35. Henderson KA and Keeney S (2005) Synaptonemal complex formation: Where does it start? *Bioessays* **27**, 995-998.
36. Henderson K, Kee K, Maleki S, Santini PA, and Keeney S (2006) Cyclin-dependent kinase directly regulates initiation of meiotic recombination. *Cell* **125**, 1321-1332.
37. Neale MJ and Keeney S (2006) Clarifying the mechanics of DNA strand exchange in meiotic recombination. (Invited review). *Nature* **442**, 153-158.
38. Martini E, Diaz RL, Hunter N, and Keeney S (2006). Crossover homeostasis in yeast meiosis. *Cell* **126**, 285-295.
39. Keeney S and Neale MJ (2006) Initiation of meiotic recombination by formation of DNA double-strand breaks: mechanism and regulation. (Meeting proceedings). *Biochem. Soc. Trans.*, **34**, 523-525.
40. Liebe B, Pethukhova G, Barchi M, Bellani M, Braselmann H, Nakano T, Pandita MTK, Jasin M, Fornace A, Meistrich ML, Baarends WM, Schimenti J, de Lange T, Keeney S, Camerini-Otero RD, and Scherthan H (2006). Mutations that affect meiosis in male mice influence the dynamics of the mid-preleptotene and bouquet stages. *Exp. Cell Res.* **312**, 3768-3781.
41. Keeney S (2007) Spo11 and the formation of DNA double-strand breaks in meiosis. In *Genome Dynamics and Stability*, vol. 2, "Recombination and Meiosis: Crossing Over and Disjunction." R. Egel and D.-H. Lankenau, Eds., Springer, Berlin, pp. 81-123.
42. Maleki S, Neale MJ, Arora C, Henderson KA, and Keeney S (2007) Interactions between Mei4, Rec114, and other proteins required for meiotic DNA double-strand break formation in *Saccharomyces cerevisiae*. *Chromosoma* **116**, 471-486. PMC2084462

43. Kauppi L, Jasin M, and Keeney S (2007) Meiotic crossover hotspots contained in haplotype block boundaries of the mouse genome. *Proc. Natl. Acad. Sci. USA* **104**, 13396-13401. PMC1948908
44. Pan J and Keeney S (2007) Molecular cartography: Mapping the landscape of meiotic recombination. (Invited primer.) *PLoS Biology* **5**, 2775-2777. PMC2140090
45. Murakami H and Keeney S (2008) Regulating the formation of DNA double-strand breaks in meiosis. (Perspective article.) *Genes Dev.* **22**, 286-292. PMC2731648
46. Barchi M, Roig I, Cole F, Di Giacomo M, de Rooij DG, *Keeney S, and *Jasin M (2008) ATM promotes the obligate XY crossover and both crossover control and chromosome axis integrity on autosomes. *PLoS Genet.* **4**, e1000076. *Corresponding authors. PMC2374915
47. Roig I and Keeney S (2008) Probing meiotic recombination decisions (preview). *Dev. Cell* **15**, 331-332. PMID: 18804427
48. Kniewel R and Keeney S (2009) Histone methylation sets the stage for meiotic DNA breaks (Minireview). *EMBO J.* **28**, 81-83. PMC2634739
49. Murakami H, Borde V, Nicolas A, and Keeney S (2009) Gel electrophoresis assays for analyzing DNA double-strand breaks in *Saccharomyces cerevisiae* at various spatial resolutions. *Methods Mol. Biol.* **557**, 117–142. PMC3157973
50. Neale MJ and Keeney S (2009) End-labeling and analysis of Spo11-oligonucleotide complexes in *Saccharomyces cerevisiae*. *Methods Mol. Biol.* **557**, 183–195. PMC3162315
51. Pan J and Keeney S (2009) Detection of SPO11-oligonucleotide complexes from mouse testes. *Methods Mol. Biol.* **557**, 197–207. PMC3157917
52. Keeney S (Editor) (2009) *Meiosis, Volume 1, Molecular and Genetic Methods*. Vol. 557 in the *Methods in Molecular Biology* series, Humana Press, New York. PMID: 19799171
53. Keeney S (Editor) (2009) *Meiosis, Volume 2, Cytological Methods*. Vol. 558 in the *Methods in Molecular Biology* series, Humana Press, New York. PMID: 19777686
54. Thacker D and Keeney S (2009) PCH'ing together an understanding of crossover control (minireview). *PLoS Genet.* **5**, e1000576. PMC2708908
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