Prepared: April 12, 2021

Name: **Hiten D Madhani, MD, PhD**

Position: Professor
Stuart Lindsay Endowed Chair
Biochemistry & Biophysics
School of Medicine

Address: UCSF
Biochemistry and Biophysics
600 16th Street, N-372C
San Francisco, CA 94143
415-514-0594
Hiten.Madhani@ucsf.edu
http://madhanilab.ucsf.edu

EDUCATION

1982 - 1986	Stanford University, Stanford, CA	B.S. highest honors	Biological Sciences
1982 - 1986	Stanford University, Stanford, CA	M.S.	Biological Sciences
1989 - 1993	University of California, San Francisco	Ph.D.	Genetics
1986 - 1995	University of California, San Francisco;	M.D.	
1995 - 1999	Whitehead Institute, Cambridge MA.	Postdoctoral Fellow	

PRINCIPAL POSITIONS HELD

1984 - 1984	Stanford University	Teaching Assistant, Qualitative Organic Analysis	Dept of Chemistry
1985 - 1985	Stanford University	Teaching Assistant, Undergraduate Core Laboratories	Dept of Biological Sciences
1990 - 1990	UCSF	Teaching Assistant, Introductory Biochemistry	Dept of Biochemistry and Biophysics
1999 - 2005	UCSF	Assistant Professor	Dept of Biochemistry and Biophysics
2005 - 2008	UCSF	Associate Professor	Dept of Biochemistry and Biophysics

2008 - present	UCSF	Professor	Dept of Biochemistry and Biophysics

OTHER POSITIONS HELD CONCURRENTLY

1999 - present	Tetrad Graduate Program	Member
2010 - present	Integrated Program in Quantitative Biology	Member
2010 - present	Systems Biology Graduate Program	Member
2006 - present	Comprehensive Cancer Center	Member
2008 - present	Microbial Pathogenesis and Host Defense Training Program	Member
2009 - present	QB3	Member
2012 - present	Biophysics Graduate Program	Member
2012 - present	Bioinformatics Graduate Program	Member
2014 - present	Biomedical Sciences Graduate Program	Member
2017 - present	Chan-Zuckerberg BioHub	Investigator

HONORS AND AWARDS

1986	Fox Award for Outstanding Undergraduate in Department of Biological Sciences	Stanford University
1986	Firestone Medal for Excellence in Research	Stanford University
1987	Dean's Prize for Student Research	University of California, San Francisco
1991	Chancellor's Fellowship	University of California, San Francisco
1996	Finalist, Pharmacia-Science Prize	
1995	Helen Hay Whitney Foundation Postdoctoral Research Fellowship	Whitehead Instutite
1998	Burroughs-Wellcome Fund Career Award	Whitehead Institute
2000	David and Lucille Packard Foundation Fellowship for Scientists and Engineers	University of California, San Francisco
2005	Leukemia and Lymphoma Society Scholar	University of California, San Francisco
2014	Elected Fellow, American Academy of Microbiology	University of California, San Francisco
2014	Haile T. Debas Academy of Medical Educators Excellence in Teaching Award	University of California, San Francisco
2015	UCSF Outstanding Faculty Mentor Award	University of California, San Francisco

2017	Chan-Zuckerberg BioHub Investigator Award	Chan-Zuckerberg Biohub, Inc.
2020	Elected Fellow, American Association for the Advancement of Science (AAAS)	University of California, San Francisco

MEMBERSHIPS

2013 - present RNA Society

2014 AAAS

SERVICE TO PROFESSIONAL PUBLICATIONS

2008 - 2018 Editorial Board: PLoS Genetics

2008 - 2017 Editorial Board: PLoS Pathogens

1999 - present Ad hoc reviewer: Many journals, eLife, PLoS Pathogens, PLoS Genetics, Nature Microbiology, Science, Nature, Cell, Molecular Cell etc.

INTERNATIONAL INVITED PRESENTATIONS

2003	Institute of Biochemistry, ETH Hönggerberg, Zürich, Switzerland	Speaker
2003	Dept. of Physiological Chemistry, UMC Utrecht, the Netherlands	Speaker
2003	3rd Cryptococcus neoformans Genome Conference, Vancouver, BC, Canada	Speaker
2003	FEBS Workshop: Wageningen, The Netherlands	Speaker
2002	Transcription and Chromatin Workshop, Marie Curie Institute, Oxted, UK	Speaker
2003	Banting and Best Department of Medical Research, University of Toronto, Toronto, ON, Canada	Speaker
2004	Graduate student-invited, Netherlands Cancer Institute	Speaker
2007	Plenary Presentation: Banff Workshop in Stochastics in Biology	Speaker
2009	Dept. of Molecular Genetics, University of Toronto, Toronto, ON, Canada	Speaker
2013	FEBS Course, Human Fungal Pathogens, La Colle sur Loup, France	Speaker
2014	Department of Physiological Chemistry, Ludwig Maximillans-Universitat, Munich, Germany	Speaker
2014	9th International Conference on Cryptococcus and Cryptococcosis, Royal Tropical Institute, Amsterdam, The Netherlands	Speaker

2015	FEBS Course, Human Fungal Pathogens, La Colle sur Loup, France	Speaker
2016	Gordon Chromatin Conference, Les Diablerets, Switzerland	Speaker
2017	Wellcome Trust Center for Cell Biology, University of Edinburgh, Edinburgh, Scotland, United Kingdom	Speaker
2017	Medical Research Council (MRC) Human Genetics Unit, Edinburgh, Edinburgh, Scotland, United Kingdom	Speaker
2017	10th International Conference on Cryptococcus and Cryptococcosis, Foz do Iguaçu, Brazil	Session Chair and Speaker
2018	Max-Planck-Institute of Biochemistry (Martinsried) Distinguished Visiting Seminar (scheduled)	Speaker
2018	Clinical and Biological Frontiers in Epigenetics, Nassau, Bahamas	Speaker
2019	London Institute of Medical Sciences, Medical Research Council, London, UK	Speaker
2019	Gurdon Institute, Cambridge University, Cambridge, UK	Speaker
2019	Laboratory of Molecular Biology, Medical Research Council, Cambridge, UK	Speaker
2019	MPI Distinguished Visitor Series, Max Planck Institute of Biochemistry, Martinsried, Germany	Speaker
2019	The 16th Annual Anat Krauskopf Memorial Lecture, Tel Aviv University, Tel Aviv, Israel	Speaker

NATIONAL INVITED PRESENTATIONS

1992	RNA Processing Meeting, Cold Spring Harbor, NY	Speaker
1993	RNA Processing Meeting, Cold Spring Harbor, NY	Speaker
1996	Yeast Genetics and Molecular Biology Meeting, Madison, WI	Speaker
1997	Yeast Cell Biology Meeting, Cold Spring Harbor, NY	Speaker
1998	RNA Tumor Viruses Meeting, Cold Spring Harbor, NY	Speaker
	Massachusetts General Hospital Cancer Center, Charlestown MA	Speaker
1999	Yeast Cell Biology Meeting, Cold Spring Harbor, NY	Speaker
2002	Seminar, Dept. of Molecular Oncology, Genentech, Inc	Speaker
2003	Keystone Symposium: Chromatin: Organizing the Genome for Patterns of Gene Expression in Health and Disease, Big Sky Resort, MO	Speaker
2003	Biochemistry and Biophysics Department Seminar, Texas A&M University, College Station TX	Speaker

2003	Institute Seminar, Fred Hutchinson Cancer Research Center, Seattle WA	Speaker
2003	Gordon Research Conference: Molecular and Cellular Biology, Tilton NH	Speaker
2004	Gordon Research Conference: Cellular and Molecular Fungal Biology, Holderness School, Plymouth NH	Speaker
2004	FASEB Meeting: Yeast Chromosome Structure, Replication & Segregation, Pine Mountain GA	Speaker
2004	Genetics Society Meeting: Yeast Genetics & Molecular Biology, Seattle, WA	Speaker
2004	Colloquium, Biology Department, M.I.T., Cambridge MA	Speaker
2004	Seminar, Department of Cell Biology, Harvard Medical School, Boston, MA	Speaker
2004	Seminar, UMDNJ Medical School, Dept. of Microbiology and Molecular Genetics, Newark NJ	Speaker
2004	Seminar, Section of Molecular and Cellular Biology, UC Davis, Davis, CA	Speaker
2004	Seminar, Dept. of MCD Biology, University of Michigan, Ann Arbor, MI	Speaker
2005	Seminar, Molecular Biology Program, Memorial Sloan-Kettering Cancer Center, New York, NY	Speaker
2005	Keystone Symposium: Epigenetics and Chromatin, Snowbird, UT	Speaker
2005	University of Utah Genetics Program, Snowbird, UT	Speaker
2005	FASEB Meeting: Chromatin and Transcription, Snowmass, CO	Speaker
2005	David and Lucile Packard Foundation Fellows Meeting, Monterey, CA	Speaker
2005	Frontiers Lecture, Stanford University School of Medicine, Stanford, CA	Speaker
2006	Seminar, graduate student-invited, UC Irvine	Speaker
2006	Seminar, graduate student-invited, University of Georgia	Speaker
2007	Seminar, Department of Biochemistry and Biophysics, SUNY Stony Brook	Speaker
2007	Keystone Symposium: Epigenetics: Regulation of Chromatin Structure in Development and Disease: Co-organizer	Speaker
2007	Gordon Epigenetics Conference	Speaker
2008	Seminar: postdoctoral fellow-invited, University of Wyoming	Speaker

2009	Seminar, Dept. of Microbiology, University of Minnesota	Speaker
2009	Seminar, Dept. of Biochemistry and Biophysics, University of Toronto	Speaker
2010	Seminar, Dept. of Pharmacology and Cell Biology, Duke University	Speaker
2010	Seminar, Dept. of Biochemistry and Molecular Genetics, University of Colorado	Speaker
2010	Gordon Chromatin Conference	Speaker
2011	Seminar, Dept. of Biological Chemistry, UC Irvine	Speaker
2011	Seminar, Dept. of Molecular Oncology, Genentech, Inc	Speaker
2011	Seminar, Whitehead Institute/MIT	Speaker
2011	Penn State Summer Symposium in Molecular Biology: Chromatin and Epigenetics	Speaker
2011	Seminar, Dept. of Cell Biology, Johns Hopkins School of Medicine	Speaker
2011	Seminar, UCI-INSERM Symposium on Epigenetics and Cellular Plasticity	Speaker
2012	Plenary Presentation, Keystone Symposium on Fungal Pathogens	Speaker
2012	Seminar, The Scripps Research Institute	Speaker
2012	Seminar, Dept of Microbiology, Columbia University	Speaker
2012	Seminar, Dept. of Biochemistry and Molecular Pharmacology, University of Massachusetts Medical Center	Speaker
2012	Seminar, Molecular Biology Program, Memorial Sloan-Kettering Cancer Center	Speaker
2012	Seminar, Dept. of Pathology, University of Utah School of Medicine	Speaker
2012	Seminar, Dept. of Biology, Stanford University	Speaker
2012	Seminar, National Institute of Environmental Health Sciences, Chapel Hill, NC	Speaker
2012	Seminar, Fred Hutchinson Cancer Center	Speaker
2013	Biology Colloquium, Massachusetts Institute of Technology	Speaker
2014	Seminar, Dept. of Molecular Biochemistry and Biophysics, Yale University	Speaker
2014	Seminar, Molecular Biology Program, Skirball Institute, New York University	Speaker
2014	Plenary Presentation, Gordon Conference on Post-Transcriptional Regulation of Gene Expression	Speaker

2014	Seminar, Dept. of Cell Biology, Harvard Medical School	Speaker
2014	Seminar, Molecular Biology Institute, UCLA	Speaker
2014	Seminar, Dept. of Biology, UCSD	Speaker
2014	PPoF Symposium, Dept. of Plant Pathology and Microbiology, Texas A&M University	Speaker
2015	Plenary Presentation, 28th Fungal Genetics Conference, Asilomar	Speaker
2015	Seminar, Dept. of Biochemistry, Columbia Medical School	Speaker
2015	Seminar, Skirball Institute of Bimolecular Medicine, NYU School of Medicine	Speaker
2015	Seminar, Dept. of Molecular Biochemistry and Biophysics, Yale University	Speaker
2015	Seminar, Dept. of Biology, UCSD	Speaker
2015	Seminar, Dept. of Molecular Biology and Genetics, Johns Hopkins School of Medicine	Speaker
2015	Seminar, Center for Systems Biology, UC Berkeley	Speaker
2016	Seminar, Dept. of Human Genetics, UCLA	Speaker
2016	Gordon Research Conference, Post-transcriptional Gene Regulation	Speaker
2016	Epicypher Conference on Biological and Clinical Frontiers in Epigenetics, San Juan, Puerto Rico	Speaker
2016	Seminar, Dept. of Molecular Genetics and Cell Biology	Speaker
2017	Seminar, Dept. of Molecular, Cellular and Developmental Biology, UC Berkeley	Speaker
2017	Seminar, Structural Biology Program, Memorial Sloan-Kettering Cancer Center, New York	Speaker
2017	Seminar, Dept. of Microbiology, Mt. Sinai School of Medicine, New York	Speaker
2017	Seminar, Molecular Mycology Course, Woods Hole Oceanographic Institute, Woods Hole, Massachusetts	Speaker
2017	Seminar, Yeast Genetics and Genomics Course, Cold Spring Harbor Laboratories, Cold Spring Harbor, New York	
2017	Plenary Presentation, 29th Fungal Genetics Conference, Asilomar	Speaker
2017	Seminar, Dept. of Biological Chemistry, UC Irvine	Speaker
2017	Seminar, Dept. of Biology, Massachusetts Institute of Technology (MIT)	Speaker
2017	Seminar, Dept. of Genetics, Harvard Medical School	Speaker

2018	Plenary Presentation, RNA Society Meeting, Berkeley, California	Speaker
2018	Seminar, Dept. of Medical Microbiology and Immunology, University of California, Davis School of Medicine, Davis, CA	Speaker
2018	Seminar, Epigenetics, Chromatin and Gene Expression Course, Cold Spring Harbor Laboratories, Cold Spring Harbor, New York	Speaker
2018	Seminar, Dept. of Cell Biology, Harvard Medical School	Speaker
2018	Seminar, Dept. of Molecular Microbiology, Washington University School of Medicine, St. Louis, MO	Speaker
2019	Workshop Presentation, 30th Fungal Genetics Conference, Asilomar, CA	Speaker
2019	Seminar, RNA Therapeutics Institute, University of Massachusetts, Worchester, MA	Speaker
2019	Seminar, Yeast Research: Origins, Insights and Breakthroughs Meeting, Cold Spring Harbor Laboratories, Cold Spring Harbor, New York	Speaker
2020	Seminar, Structural Biology Program, Memorial Sloan Kettering Cancer Center, New York	Speaker
2020	Seminar, Dept. of Biology, University of Pennsylvania, Philadelphia	Speaker
2020	Seminar, Dept. of Biochemistry, UC Irvine, Irvine, CA	Speaker
2021	Seminar, Dept. of Biology, University of Pittsburgh	Speaker

REGIONAL AND OTHER INVITED PRESENTATIONS

1999	Department of Biochemistry and Biophysics, UCSF	Speaker
2000	UCSF Comprehensive Cancer Center	Speaker
2002	UCSF Tetrad Program Annual Retreat, Tahoe City, CA	Speaker
2003	Cancer Genetics Group, UCSF Comprehensive Cancer Center	Speaker
2005	UCSF Tetrad Program Annual Retreat, Tahoe City, CA	Speaker
2008	UCSF Tetrad Program Annual Retreat, Tahoe City, CA	Speaker
2010	UCSF Tetrad Program Annual Retreat, Tahoe City, CA	Speaker
2012	Biophysics, Biomedical Informatics, Chemistry and Chemical Biology (BBC) program Annual Retreat, Monterey, CA	Speaker
2012	UCSF Tetrad Program Annual Retreat, Tahoe City, CA	Speaker

2015	UCSF Tetrad Program Annual Retreat, Tahoe City, CA	Speaker
2016	UCSF Biomedical Sciences Graduate Program Annual Retreat, Tahoe City, CA	Speaker
2017	UCSF Tetrad Program Annual Retreat, Tahoe City, CA	Speaker
2017	Quantitative Biology Consortium Programs Annual Retreat, Monterey, CA	Speaker
2018	UCSF Biomedical Sciences Graduate Program Annual Retreat, Tahoe City, CA	Speaker

GOVERNMENT AND OTHER PROFESSIONAL SERVICE

2000 - 2000	NIH Review Panel, P41 site visit, U. Washington Yeast Resource Center
2005 - 2005	University of Utah NIH Genetics Program External Reviewer
2006 - 2006	NIH Review Panel, P41 site visit, U. Washington Yeast Resource Center
2007 - 2007	NIH Review Panel, MGB, ad hoc member
2007 - present	Scientific Advisory Board Member, Saccharomyces Genome Database (NIH-funded genome resource at Stanford)
2007 - 2011	NIH Review Panel, CSRS, permanent member; Chairman from 2009-2011
2012 - 2012	NIH Review Panel, Special Emphasis Panel for Director's Early Path to Independence Award (DP5)
2013 - 2019	NIH Review Panel, PTHE, permanent member

RESEARCH & CREATIVE ACTIVITIES SUMMARY

I lead a basic science research laboratory in the Dept. of Biochemistry and Biophysics at UCSF. We investigate the impact of gene regulation on health and disease. I value curiosity-driven fundamental scientific investigation both for its impact on our understanding of the natural world and for its unanticipated utility.

PEER REVIEWED PUBLICATIONS

1. Madhani, H.D., Leadon, S.A., Smith, C.A., and Hanawalt, P.C. (1986). alpha-DNA in African Green Monkey Cells is Organized into Extremely Long Tandem Arrays. **Journal of Biological Chemistry** 261: 2314-2318.
2. Madhani, H.D., Bohr, V.A. and Hanawalt, P.C. (1986). Differential DNA Repair in Transcriptionally Active and Inactive Proto-oncogenes: c-abl and c-mos. **Cell** 45:417-423.
3. Jacks, T., Madhani, H.D., Masiarz, F.R., and Varmus, H.E. (1988). Signals for Ribosomal Frameshifting in the Rous Sarcoma Virus gag-pol Region. **Cell** 55:447-458.

4. Madhani, H.D., Jacks, T. and Varmus, H.E. (1988). Signals for the Expression of the HIV pol gene by Ribosomal Frameshifting in The Control of Human Retrovirus Gene Expression, B. Cullen and F. Wong-Staal, eds. (Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 1988), pp. 119-125.
5. Madhani, H.D., Bordonné, R. & Guthrie, C. (1990). Multiple Roles for U6 snRNA in the Splicing Pathway. **Genes and Development** 4:2274-2287.
6. Guthrie C, Madhani HD. Greetings from the RNA world. RNA Processing sponsored by the Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA, May 16-20, 1990. ***New Biologist*** 2(8):684-7. PMID: 1704252
7. Madhani, H.D. & Guthrie, C. (1992). A Novel Base-Pairing Interaction Between U2 and U6 snRNAs Suggests a Mechanism for the Catalytic Activation of the Spliceosome. **Cell** 71: 803-817.
8. Madhani, H.D. & Guthrie, C. (1994a). Randomization-selection analysis of snRNAs in vivo: Evidence for a tertiary interaction in the spliceosome. **Genes and Development** 8: 1071-1086.
9. Madhani HD, Guthrie C. (1994) Dynamic RNA-RNA interactions in the spliceosome. ***Annual Review of Genetics*** 28:1-26. PMID: 7534458
10. Madhani, H.D. & Guthrie, C. (1994b). Genetic interactions between the yeast helicase homolog Prp16 and spliceosomal snRNAs identify candidate ligands for the Prp16 RNA-dependent ATPase. **Genetics** 137(3):677-87. PMID: 8088513. PMCID: PMC1206027.
11. Madhani, H.D. & Fink, G.R. (1997). Combinatorial control required for the specificity of yeast MAPK signaling. **Science** 275(5304): 1314-7. PMID: 9036858.
12. Madhani, H.D., Styles, C.A. & Fink, G.R. (1997). MAP kinases with distinct inhibitory functions impart signaling specificity during yeast differentiation. **Cell** 91(5): 673-84. PMID: 9393860.
13. Madhani HD. (1997) Genetic abnormalities in Friedreich's ataxia. ***New England Journal of Medicine*** 336(14):1022; author reply 1022-3. PMID: 9091787
14. Madhani HD, Fink GR. (1998) The riddle of MAP kinase signaling specificity. ***Trends in Genetics*** 14(4):151-5. PMID: 9594663
15. Madhani HD, Fink GR. (1998) The control of filamentous differentiation and virulence in fungi. ***Trends in Cell Biology*** 8(9):348-53. PMID: 9728395
16. Rupp, S., Summers, E., Lo, H., Madhani, H.D. & Fink, G.R. (1999) MAP kinase and cAMP filamentation signaling pathways converge on the unusually large promoter of the yeast FLO11 gene. **EMBO J.** 18(5): 1257-69. PMID: 10064592. PMCID: PMC1171216.
17. Madhani, H.D., Galitski, T., Lander, E.S.& Fink, G.R. (1999) Effectors of a developmental MAP kinase cascade revealed by expression signatures of signaling mutants. **Proc. Natl. Acad. Sci. USA** 96(22): 12530-5. PMID: 10535956. PMCID: PMC22972.
18. Madhani HD. (2000) Interplay of intrinsic and extrinsic signals in yeast differentiation ***Proceedings of the National Academy of Sciences USA*** 97(25):13461-3. PMID: 11095703.
19. Madhani HD. (2001) Accounting for specificity in receptor tyrosine kinase signaling. ***Cell*** 106(1):9-11. PMID: 11461696

20. Brugnera, E., Haney, L., Grimsley, C., Lu, M., Walk S.F., Tosello-Trampont, A.C., Macara I.G., Madhani, H., Fink G.R., Ravichandran K.S. (2002) Unconventional Rac-GEF activity is mediated through the Dock180-ELMO complex. **Nature Cell Biology** 4:574-82. PMID: 12134158.

21. Hwang, W., Venkatasubrahmanyam, S., Ianculescu, A.G., Tong, A., Boone, C., Madhani, H.D. (2003) A conserved RING finger protein required for histone H2B monoubiquitination and cell size control. **Molecular Cell** 11: 261-266. Published online Dec. 28, 2002. PMID: 12535538.

22. Meneghini, M.D., Wu., M, and Madhani, H.D. (2003) Conserved histone variant H2A.Z prevents the ectopic spread of silent heterochromatin. **Cell** 112: 725-736. PMID: 12628191.

23. Kobor, M.S., Venkatasubrahmanyam, S., Meneghini, M.D., Gin, J.W., Jennings, J.L., Link, A.J., Madhani, H.D.*, Rine, J.* (2004) A protein complex containing the conserved Swi2/Snf2-related ATPase Swr1p deposits histone variant H2A.Z into euchromatin. **PLoS Biology** 2: 587-599. PMID: 15045029. PMCID: PMC374244. *co-corresponding authors.

24. Schwartz MA, Madhani HD. Principles of MAP kinase signaling specificity in Saccharomyces cerevisiae. ***Annual Review of Genetics*** 2004; 38:725-48. PMID: 15568991

25. Bao, M.Z., Schwartz, M.A., Cantin, G.T., Yates, J.R. 3rd, Madhani, H.D. (2004). Pheromone-dependent destruction of the Tec1 transcription factor is required for MAP kinase signaling specificity in yeast. **Cell** 119: 911-1000. PMID: 15620357.

26. Kung C., Kenski, D.M., Dickerson, S.H., Howson, R.W., Kuyper, L.F., Madhani, H.D., Shokat, K.M. (2005) Chemical genomic profiling to identify intracellular targets of a multiplex kinase inhibitor. **Proc. Natl. Acad. Sci. USA** 102: 3487-3592. PMID: 15738404. PMCID: PMC552777.

27. Raisner, R.M., Hartley, P.D., Meneghini, M.D., Bao, M.Z., Liu, C.L., Schreiber, S.L., Rando, O.J., Madhani, H.D. (2005) Histone variant H2A.Z marks the 5' ends of both active and inactive genes in euchromatin. **Cell** 123: 233-248. PMID: 16239142. PMCID: PMC2039754.

28. Schwartz, M.A. and Madhani, H.D. (2006) Control of MAPK signaling specificity by a conserved residue in the MEK-binding of the yeast scaffold protein Ste5. **Current Genetics** 49:351-363. PMID: 16463042.

29. Kung, C., Kenski, D.M., Krukenbeg, K., Madhani, H.D., and Shokat, K.M. (2006) Selective kinase inhibition by exploiting differential pathway sensitivity. **Chemistry and Biology** 13, 399-407. PMID: 16632252. PMCID: PMC2932700.

30. Raisner RM, Madhani HD (2006) Patterning chromatin: form and function for H2A.Z variant nucleosomes. ***Current Opinions in Genetics and Development*** 16(2):119-24. PMID: 16503125.

31. Madhani H.D. (2006). Functional analysis of protein kinase networks in living cells: beyond "knock-outs" and "knock-downs". **Methods** 40: 251-4. PMID: 16884918.

32. Tompa, R., Madhani, H.D. (2007). Histone H3 Lysine 36 Methylation Antagonizes Silencing in Saccharomyces cerevisiae Independently of the Rpd3S Histone Deacetylase Complex. **Genetics** 175: 585-93. PMID: 17179083. PMCID: PMC1800606.

33. Chun, C.D., Liu, O.W., Madhani, H.D. (2007). A Link between virulence and homeostatic responses to hypoxia during infection by the human fungal pathogen Crytococcus neoformans. **PLoS Pathogens** 3: e22. PMID: 17319742. PMCID: PMC1803011.

34. Liu, O.W., Kelly, M.J., Chow, E.D., Madhani, H.D. (2007). Parallel b-helix proteins required for accurate capsule polysaccharide synthesis and virulence in the yeast Cryptococcus neoformans. **Eukaryotic Cell** 6: 630-40. PMID: 17337638. PMCID: PMC1865648.

35. Venkatasubrahmanyam, S., Hwang, W.W. Meneghini, M.D., Tong, A.H. & Madhani, H.D. (2007). Genome-wide, as opposed to local, antisilencing is mediated redundantly by the euchromatic factors Set1 and H2A.Z. **Proc Natl Acad Sci USA** 104: 16609-16614. PMID: 17925448. PMCID: PMC2034229.

36. Cantin GT, Shock TR, Park SK, Madhani HD, Yates JR (2007) Optimizing TiO2-based phosphopeptide enrichment for automated multidimensional liquid chromatography coupled to tandem mass spectrometry. ***Analytical Chemistry*** 79(12):4666-73. PMID: 17523591.

37. Chow, E.D., Liu, O.W., O'Brien, S & Madhani, H.D. (2007). Exploration of whole-genome responses of the human AIDS-associated yeast pathogen Cryptococcus neoformans var grubii: nitric oxide stress and body temperature. **Current Genet.** 57: 137-148. PMID: 17661046.

38. Raisner, R.M. & Madhani, H.D. (2008). Genomewide screen for negative regulators of sirtuin activity in S. cerevisiae reveals 40 loci and links to metabolism. **Genetics** 179: 1933-1944. PMID: 18689887. PMCID: PMC2516070.

39. Rougemaille, M., Shankar, S., Braun, S., Rowley, M. & Madhani, H.D. (2008). Ers1, a rapidly diverging protein essential for RNA interference-dependent heterochromatic silencing in Schizosaccharomyces pombe. **J. Biol. Chem.** 283: 25770-25773. PMID: 18658154. PMCID: PMC2533792.

40. Breslow, D.K., Cameron, D.M., Collins, S.R., Schuldiner, M., Stewart-Ornstein, J., Newman, H.W., Braun, S., Madhani, H.D., Krogan, N.J. & Weissman, J.S. (2008). A comprehensive strategy enabling high-resolution functional analysis of the yeast genome. **Nature Methods** 5: 711-718. PMID: 18622397. PMCID: PMC2756093.

41. Liu, O.W., Chun, C.D., Chow, E.D., Chen, C., Madhani, H.D.* & Noble, S.M. (2008). Systematic genetic analysis of virulence in the human fungal pathogen Cryptococcus neoformans. **Cell** 135: 174-188. PMID: 18854164. PMCID: PMC2628477. *Corresponding author

42. Shock, T.R. & Madhani, H.D. (2009). Hog1 MAP kinase interrupts signal transduction between the Kss1 MAP kinase and the Tec1 transcription factor to maintain pathway specificity. **Eukaryotic Cell** 8: 606-616. PMID: 19218425. PMCID: PMC2669196.

43. Hwang, W.W. & Madhani, H.D. (2009). Nonredundant Requirement for Multiple Histone Modifications for the Early Anaphase Release of the Mitotic Exit Regulator Cdc14 from Nucleolar Chromatin. **PLoS Genetics** 5:e1000588. PMID: 19662160. PMCID: PMC2716543.

44. Hartley, P.D. & Madhani, H.D. (2009). Mechanisms that specify nucleosome location and identity. **Cell** 137: 445-458. PMID: 19410542. PMCID: PMC2677553.

45. Chun, C.D. & Madhani, H.D. (2010). Applying Genetics and Molecular Biology to the Study of the Human Pathogen Cryptococcus neoformans. **Methods in Enzymology** 470:797-831. PMID: 20946836. PMCID: PMC3611884.
46. Garcia, J.G., Dumesic, P.D., Hartley, P.D., El-Samad, H., Madhani H.D. (2010). Combinatorial, site-specific requirement for heterochromatic silencing factors in the elimination of nucleosome-free regions. **Genes and Development** 24: 1759-71. PMID: 20675407. PMCID: PMC2922504.
47. McCullagh, E., Sehsan, A., El-Samad, H., Madhani, H.D. (2010) Coordinate control of gene expression noise and interchromosomal interactions in a MAP kinase pathway. **Nature Cell Biology**, 12:954-62. PMID: 20852627. PMCID: PMC2948760.
48. Chun CD, Madhani HD (2010) Applying genetics and molecular biology to the study of the human pathogen Cryptococcus neoformans. ***Methods Enzymol***. 470:797-831. PMID: 20946836.
49. Garcia JF, Dumesic PA, Hartley PD, El-Samad H, Madhani HD (2010) Combinatorial, site-specific requirement for heterochromatic silencing factors in the elimination of nucleosome-free regions. ***Genes and Development***. 24(16):1758-71. PMID: 20675407.
50. Chun CD, Madhani HD (2010) Ctr2 links copper homeostasis to polysaccharide capsule formation and phagocytosis inhibition in the human fungal pathogen Cryptococcus neoformans. ***PLoS One*** 5(9). PMID: 20824073.
51. Braun, S., Garcia, J.F., Rowley, M., Rougemaille, M., Shankar, S., Madhani, H.D. (2011) The Cul4-Ddb1^{Cdt2} ubiquitin ligase inhibits the invasion of a boundary-associated anti-silencing factor into heterochromatin. ***Cell*** 144: 41-54. PMID: 21215368. PMCID: PMC3645473.
52. Canzio D., Chang E.Y., Shankar S., Kuchenbecker K.M., Simon M.D., Madhani H.D., Narlikar G.J., Al-Sady B. (2011) Chromodomain-mediated oligomerization of HP1 suggests a nucleosome-bridging mechanism for heterochromatin assembly. ***Molecular Cell*** 41:67-81. PMID: 21211724. PMCID: PMC3752404.
53. Chun C.D., Brown J.C., Madhani H.D. (2011) A Major Role for Capsule-Independent Phagocytosis-Inhibitory Mechanisms in Mammalian Infection by *Cryptococcus neoformans*. ***Cell Host & Microbe*** 9:243-51. PMID: 21402362. PMCID: PMC3077425.
54. Charles G.M., Chen C., Shih S.C., Collins S.R., Beltrao P., Zhang X., Sharma T., Tan S., Burlingame A.L., Krogan N.J., Madhani H.D.,* Narlikar G.J* (2011) Site-specific acetylation mark on an essential chromatin-remodeling complex promotes resistance to replication stress. ***Proceedings of the National Academy of Sciences, USA*** 108:10620-5. PMID: 21673141. PMCID: PMC3127919. *co-corresponding authors
55. Kiely C.M., Marguerat S., Garcia J., Madhani H.D., Bähler J, Winston F.(2011) Spt6 is required for heterochromatic silencing in the fission yeast *Schizosaccharomyces pombe*. ***Molecular and Cellular Biology*** 20:4193-204. PMID: 21844224. PMCID: PMC3187285.
56. El-Samad H, Madhani HD (2011) Can a systems perspective help us appreciate the biological meaning of small effects? ***Developmental Cell*** 21(1):11-3. PMID: 21763599.
57. Kiely CM, Marguerat S, Garcia JF, Madhani HD, Bähler J, Winston F. (2011) Spt6 is required for heterochromatic silencing in the fission yeast Schizosaccharomyces bombe. ***Molecular and Cellular Biology*** 31(20):4193-204. PMID: 21844224.

58. Madhani HD. Quorum sensing in fungi: Q&A (2011) ***PLoS Pathogens*** 7(10):e1002301. PMID: 22046125.
59. Rougemaille M, Braun S, Coyle S, Dumesic PA, Garcia JF, Isaac RS, Libri D, Narlikar GJ, Madhani HD (2012) Ers1 links HP1 to RNAi. ***Proceedings of the National Academy of Sciences USA*** 109(28):11258-63. PMID: 22733737.
60. Braun S, Madhani HD (2012) Shaping the landscape: mechanistic consequences of ubiquitin modification of chromatin. ***EMBO Reports*** 13(7):619-30. PMID: 22688965.
61. Xu M, Soloveychik M, Ranger M, Schertzberg M, Shah Z, Raisner R, Venkatasubrahmanyan S, Tsui K, Gebbia M, Hughes T, van Bakel H, Nislow C, Madhani HD, Meneghini MD. (2012) Timing of transcriptional quiescence during gametogenesis is controlled by global histone H3K4 demethylation. ***Developmental Cell*** 23(5):1059-71. PMID: 23123093.
62. Brown JC, Madhani HD (2012) Approaching the functional annotation of fungal virulence factors using cross-species genetic interaction profiling. ***PLoS Genetics*** 8(12):e1003168. PMID: 23300468.
63. Dumesic PA, Natarajan P, Chen C, Drinnenberg IA, Schiller BJ, Thompson J, Moresco JJ, Yates JR, Bartel DP, Madhani HD (2013) Stalled spliceosomes are a signal for RNAi-mediated genome defense. ***Cell*** 152(5):957-68. PMID: 23415457.
64. Canzio D, Liao M, Naber N, Pate E, Larson A, Wu S, Marina DB, Garcia JF, Madhani HD, Cooke R, Schuck P, Cheng Y, Narlikar GJ (2013) A conformational switch in HP1 releases auto-inhibition to drive heterochromatin assembly. ***Nature*** 496(7445):377-81. PMID: 23485968.
65. Al-Sady B, Madhani HD, Narlikar GJ. (2013) Division of labor between the chromodomains of HP1 and Suv39 methylase enables coordination of heterochromatin spread. ***Molecular Cell*** 51(1):80-91. PMID: 23849629.
66. Marina DB, Shankar S, Natarajan P, Finn KJ, Madhani HD (2013) A conserved ncRNA-binding protein recruits silencing factors to heterochromatin through an RNAi-independent mechanism. ***Genes and Development*** 27(17):1851-6. PMID: 24013500.
67. Dumesic PA, Madhani HD (2013) The spliceosome as a transposon sensor. ***RNA Biology*** 10(11):1653-60. PMID: 24418889.
68. Madhani HD (2013) The frustrated gene: origins of eukaryotic gene expression. ***Cell*** 155(4):744-9. PMID: 24209615.
69. Dumesic PA, Madhani HD (2014) Recognizing the enemy within: licensing RNA-guided genome defense. ***Trends Biochem Sci***. 39(1):25-34. PMID: 24280023.
70. Butts A, Koselny K, Chabrier-Roselló Y, Semighini CP, Brown JC, Wang X, Annadurai S, Didone L, Tabroff J, Childers WE, Abou-Gharbia M, Wellington M, Cardenas ME, Madhani HD, Heitman J, Krysan DJ. (2014) Estrogen Receptor Antagonists Are Anti-Cryptococcal Agents That Directly Bind EF Hand Proteins and Synergize with Fluconazole In Vivo. ***MBio*** 5(1). PMID: 24520056.
71. Madhani HD (2013) snRNA Catalysts in the Spliceosome's Ancient Core. ***Cell*** 155(6):1213-5. PMID: 24315092.
72. Goranov, A.I. and Madhani, H.D. (2014) Functional profiling of pathogen genomes. ***Cold Spring Harbor Perspectives in Medicine*** 5(3):a019596. PMID: 25377143. PMCID: In process.

73. Brown, J.C.S., Nelson, J., VanderSluis, B., Deshpande, R., Butts, A., Kagan, S., Polacheck, I., Krysan, D.J., Myers, C.L., and Madhani, H.D. (2014) Unraveling the biology of a fungal meningitis pathogen using chemical genetics. ***Cell*** 159(5):1168-87. PMID: 25416953. PMCID: PMC4243055.

74. Dumesic, P.A., Homer, C.M., Moresco, J.J., Pack, L.R., Shanle, E.K., Strahl, B.D., Fujimori, D.G., Yates, J.R., Madhani, H.D. (2015) Product binding enforces the genomic specificity of a yeast Polycomb repressive complex. ***Cell*** 160(1-2):204-18. PMID: 25533783. PMCID: PMC4303595.

75. Garcia JF, Al-Sady B, Madhani HD. Intrinsic Toxicity of Unchecked Heterochromatin Spread Is Suppressed by Redundant Chromatin Boundary Functions in Schizosacchromyces pombe. **G3** (Bethesda). 2015 May 08; 5(7):1453-61. PMID: 25957277.

76. Desjardins CA, Sanscrainte ND, Goldberg JM, Heiman D, Young S, Zeng Q, Madhani HD, Becnel JJ, Cuomo CA. Contrasting host-pathogen interactions and genome evolution in two generalist and specialist microsporidian pathogens of mosquitoes. ***Nature Communications*** 2015 May 13; 6:7121. PMID: 25968466.

77. Dumesic PA, Rosenblad MA, Samuelsson T, Nguyen T, Moresco JJ, Yates JR, Madhani HD. Noncanoncial signal recognition particle RNAs in a major eukaryotic phylum revealed by purification of SRP from the human pathogen Cryptococcus neoformans. ***Nucleic Acids Res.*** 2015 Oct 15; 43(18):9017-27. PMID: 26275773.

78. Homer CM, Summers DK, Goranov AI, Clarke SC, Wiesner DL, Diedrich JK, Moresco JJ, Toffaletti D, Upadhya R, Caradonna I, Petnic S, Pessino V, Cuomo CA, Lodge JK, Perfect J, Yates JR, Nielsen K, Craik CS, Madhani HD. Intracellular Action of a Secreted Peptide Required for Fungal Virulence. ***Cell Host and Microbe*** 2016 Jun 08; 19(6):849-64. PMID: 27212659.

79. Inada M, Nichols RJ, Parsa JY, Homer CM, Benn RA, Hoxie RS, Madhani HD, Shuman S, Schwer B, Pleiss JA. Phospho-site mutants of the RNA Polymerase II C-terminal domain alter subtelomeric gene expression and chromatin modification state in fission yeast. ***Nucleic Acids Res.*** 2016 Nov 02; 44(19):9180-9189. PMID: 27402158.

80. Al-Sady B, Greenstein RA, El-Samad HJ, Braun S, Madhani HD. Sensitive and Quantitative Three-Color Protein Imaging in Fission Yeast Using Spectrally Diverse, Recoded Fluorescent Proteins with Experimentally-Characterized In Vivo Maturation Kinetics. ***PLoS One***. 2016; 11(8):e0159292. PMID: 27479698.

81. Clarke SC, Dumesic PA, Homer CM, O'Donoghue AJ, La Greca F, Pallova L, Majer P, Madhani HD*, Craik CS*. Integrated Activity and Genetic Profiling of Secreted Peptidases in Cryptococcus neoformans Reveals an Aspartyl Peptidase Required for Low pH Survival and Virulence. ***PLoS Pathogens*** 2016 Dec; 12(12):e1006051. PMID: 27977806. *co-corresponding authors

82. Roth R, Madhani HD, Garcia JF (2018) Total RNA Isolation and Quantification of Specific RNAs in Fission Yeast . ***Methods Mol Biol.*** 1721:63-72.

83. Garcia-Santamarina S, Festa RA, Smith AD, Yu CH, Probst C, Ding C, Homer CM, Yin J, Noonan JP, Madhani H, Perfect JR, Thiele DJ. (2018) Genome-wide analysis of the regulation of Cu metabolism in *Cryptococcus neoformans*. ***Molecular Microbiology*** Apr 02.

84. Burke JE, Longhurst AD, Merkurjev D, Sales-Lee J, Rao B, Moresco JJ, Yates JR, Li JJ, Madhani HD. (2018) Spliceosome Profiling Visualizes Operations of a Dynamic RNP at Nucleotide Resolution. ***Cell***. 173(4):1014-1030.e17.

85. Parsa JY, Boudoukha S, Burke J, Homer C, Madhani HD. (2018) Polymerase pausing induced by sequence-specific RNA-binding protein drives heterochromatin assembly. ***Genes and Development*** Jul 01; 32(13-14):953-964. PMID: 29967291.

86. Mavor D, Barlow KA, Asarnow D, Birman Y, Britain D, Chen W, Green EM, Kenner LR, Mensa B, Morinishi LS, Nelson CA, Poss EM, Suresh P, Tian R, Arhar T, Ary BE, Bauer DP, Bergman ID, Brunetti RM, Chio CM, Dai SA, Dickinson MS, Elledge SK, Helsell CVM, Hendel NL, Kang E, Kern N, Khoroshkin MS, Kirkemo LL, Lewis GR, Lou K, Marin WM, Maxwell AM, McTigue PF, Myers-Turnbull D, Nagy TL, Natale AM, Oltion K, Pourmal S, Reder GK, Rettko NJ, Rohweder PJ, Schwarz DMC, Tan SK, Thomas PV, Tibble RW, Town JP, Tsai MK, Ugur FS, Wassarman DR, Wolff AM, Wu TS, Bogdanoff D, Li J, Thorn KS, O'Conchúir S, Swaney DL, Chow ED, Madhani HD, Redding S, Bolon DN, Kortemme T, DeRisi JL, Kampmann M, Fraser JS. Extending chemical perturbations of the ubiquitin fitness landscape in a classroom setting reveals new constraints on sequence tolerance. ***Biol Open.*** 2018 Jul 23; 7(7). PMID: 30037883.

87. Harrigan, P., Madhani, H.D.*, El-Samad, H.* (2018) Real-Time Genetic Compensation Defines the Dynamic Demands of Feedback Control. ***Cell*** 175: 877-886.

88. Burke JE, Longhurst AD, Natarajan P, Rao B, Liu J, Sales-Lee J, Mortensen Y, Moresco JJ, Diedrich JK, Yates JR, Madhani HD (2019) A non-Dicer RNAse III and Four Other Novel Factors Required for RNAi-mediated Transposon Supression in the Human Pathogenic Yeast *Cryptococcus neoformans.* ***G3*** 9: 2235-2244.

89. Brimacombe CA, Burke JE, Parsa JY, Catania S, O'Meara TR, Witchley JN, Burrack LS, Madhani HD, Noble SM (2019). A Natural Histone H2A Variant Lacking the Bub1 Phosphorylation Site and Regulated Depletion of Centromeric Histone CENP-A Foster Evolvability in *Candida albicans.* ***PLoS Biology*** 17: e30000331.

90. Catania S, Dumesic PA, Pimental H, Nasif A, Stoddard CI, Burke JE, Diedrich JK, Cooke S, Shea T, Geinger E, Lintner R, Yates JR, Hajkova P, Narlikar GJ, Cuomo C, Pritchard JK, Madhani HD (2020) Evolutionary Persistence of DNA Methylation for Millions of Years After Ancient Loss of a *de novo* Methyltransfase. ***Cell*** 180:263-277.

91. Summers DK, Perry DS, Rao B, Madhani HD. (2020) Coordinate genomic association of transcription factors controlled by an imported quorum sensing peptide in Cryptococcus neoformans. ***PLoS Genetics*** 09; 16(9):e1008744. PMID: 32956370. PMCID: PMC7537855

92. Wallace EWJ, Maufrais C, Sales-Lee J, Tuck LR, de Oliveira L, Feuerbach F, Moyrand F, Natarajan P, Madhani HD, Janbon G. Quantitative global studies reveal differential translational control by start codon context across the fungal kingdom. ***Nucleic Acids Res.*** 2020 03 18; 48(5):2312-2331. PMID: 32020195

93. Dumesic PD, Stoddard CI, Catania S, Narlikar GJ, Madhani HD (2020) ATP Hydrolysis by the SNF2 Domain of Dnmt5 is Coupled to Both Specific Recognition and Modification of Hemimethylated DNA. ***Molecular Cell*** 79:127-139.

94. Dang EV, Madhani HD, Vance RE (2020) Cholesterol in Quarantine. ***Nature Immunology*** 21, 716-717.

95. Madhani HD. Unbelievable but True: Epigenetics and Chromatin in Fungi (2021) ***Trends in Genetics*** Jan; 37(1):12-20. PMID: 33092902

REVIEW ARTICLES

1. Allshire, R. and Madhani, H.D. (2017) Ten Principles of Heterochromatin Formation and Function. ***Nature Reviews Molecular and Cell Biology.*** 19(4):229-244

TEXTBOOK

1. Madhani, H.D. (2007) **From a to alpha: yeast as a model for cellular differentiation.** Cold Spring Harbor, NY: Cold Spring Harbor Press.

PATENTS

1. 10/16/2001 "Regulation of Fungal Gene Expression" 6,303,302