

REBECCA WRIGHT HEALD
Professor
Division of Cell Biology, Development, and Physiology
Molecular and Cell Biology Department
University of California, Berkeley
<https://mcb.berkeley.edu/labs/heald>

Contact

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Education

INSTITUTION AND LOCATION	DEGREE	YEAR completed	FIELD OF STUDY	MENTOR
Hamilton College, Clinton NY	B.A.	1985	Chemistry	Frank McKeon
Harvard University, Boston, MA	Ph.D.	1993	Cell Physiology	
European Molecular Biology Laboratory, Heidelberg, Germany	postdoc	1997	Cell Biology	Eric Karsenti

Employment

1985-1987	Research Assistant, UMDNJ- R.W. Johnson Medical School, Piscataway, NJ. Mentor: S.E. Hitchcock-DeGregori Ph.D.
1987-1992	Ryan Predoctoral Fellow, Harvard Medical School, Boston, MA
1993-1997	American Cancer Society Postdoctoral Fellow, Cell Biology Program European Molecular Biology Laboratory, Heidelberg, Germany
1997-2003	Assistant Professor of Cell & Developmental Biology, MCB Department, UC Berkeley
2003-2006	Associate Professor of Cell & Developmental Biology, MCB Department, UC Berkeley
2006-Present	Professor of Cell & Developmental Biology, MCB Department, UC Berkeley
2013-2018	Head, Division of Cell & Developmental Biology, MCB Department, UC Berkeley
2018-2021	Associate Dean of Research Administration, UC Berkeley
2021-Present	Co-chair, MCB Department, UC Berkeley

Honors and Awards

1999-2003	Pew Scholar Award in Biomedical Sciences
2000	Hellman Faculty Fund Award
2005	Alumni Scientist Medal in Biochemistry, Hamilton College
2005	American Society for Cell Biology, Women in Cell Biology Junior Career Award
2006	Symposium speaker, Annual Meeting of the ASCB, "Mechanisms in Mitosis"
2006	NIH Director's Pioneer Award
2007	Plenary speaker, 20 th Anniversary, Pew Scholars Program in the Biomedical Sciences
2009-2010	Professorship, Miller Institute for Basic Research in Science
2010	Outstanding Postdoc Mentoring Award, UC Berkeley
2011-Present	Flora Lamson Hewlett Endowed Chair in Biochemistry
2014	Keynote speaker, 15 th International <i>Xenopus</i> Conference
2015	Keynote speaker, Janelia Evolutionary Cell Biology Conference
2015	Symposium speaker, Annual Meeting of the ASCB, "Size and Spacing of Biological Structures"

2016	Symposium speaker, 12 th International Congress of Cell Biology, Prague
2016	Outstanding Postdoc Mentoring Award, UC Berkeley
2017	Keynote speaker, Boston Area Mitosis and Meiosis Meeting
2017	Keynote speaker, Gordon Research Conference “Motile and Contractile Systems”
2017	Landmark speaker, Jacques Monod Conference “Cell Cycle”
2017	Fellow, American Society for Cell Biology
2019	Keynote speaker, Gordon Research Conference “Chromosome Dynamics”
2019	Leon K. Henkin Citation for Distinguished Service
2019	Member, National Academy of Sciences
2020	Keynote speaker, Pew Scholars Program in the Biomedical Sciences reunion
2021	Keynote speaker, Polyploidy in development, evolution and disease, MDI
2021	Keith R. Porter Lecturer, ASCB/EMBO Annual Meeting
2021	Capstone lecture, UC Berkeley
2022	NIH Director’s Wednesday Afternoon Lecture (WALS)
2022	Member, American Academy of Arts and Sciences
2022	Keynote speaker, EMBO Dynamic Kinetochore Workshop, Oslo
2022	American Society for Cell Biology Sandy Masur Senior Leadership Award
2023	Member, American Association for the Advancement of Science

Professional Memberships and Committees

1997-Present	American Society for Cell Biology (ASCB)
2012-Present	National <i>Xenopus</i> Resource Center External Advisory Board
2013-2018	ASCB Women in Cell Biology Committee
2015-2021	Xenbase External Advisory Board
2016-2018	ASCB Council
2016-Present	International <i>Xenopus</i> Board
2018-Present	Co-chair, Life Sciences Initiative to Advance Faculty Diversity, Equity and Inclusion
2019, 2023	Advisory Council for Cluster for Pioneering Research at RIKEN, Japan
2020	Co-chair, ASCB-EMBO Annual Meeting Program Committee
2020-Present	Scientific Advisory Board, Max Planck Institute of Multidisciplinary Science, Göttingen
2022-Present	Mentor, ASCB MOSAIC Program
2022-Present	Mentor, LEAP 2 EMBL Alumni Mentorship Program
2023-Present	Jane Coffin Childs Board of Scientific Advisors
2023-Present	Advisory Board, Green Science Policy Institute

Editorships and Reviewing, Textbook Contributions

1998-Present	Reviewer for over 20 journals including <i>Cell</i> , <i>Science</i> , <i>Nature</i> and <i>eLife</i>
2001-2006	Monitoring Editor, <i>Journal of Cell Biology</i>
2007-2016	Senior Editor, <i>Journal of Cell Biology</i>
2005-Present	Editorial Board, <i>ACS Chemical Biology</i>
2009-Present	Editorial Board, <i>Cytoskeleton</i>
2011	Co-editor, Cell Structure and Dynamics Issue, <i>Curr Opin Cell Biol.</i> 23
2012-Present	Editorial Board, <i>Developmental Cell</i>
2010-2015	Contributing author, Alberts et al. textbook <i>Molecular Biology of the Cell</i> 6 th edition
2015	Co-editor, Cold Spring Harbor Perspectives in Cell Biology book “Size Control in Biology: From Organelles to Organisms”
2016-Present	Author, <i>Molecular Biology of the Cell</i> 7 th edition; <i>Essential Cell Biology</i> 6 th edition
2017-2022	Monitoring Editor, <i>Journal of Cell Biology</i>
2018	Editor for Cell Biology section of FrogBook, Cold Spring Harbor Press
2021-Present	Editorial Board, <i>PNAS</i>

Invited seminars, conferences, workshops and courses

2023

Invited seminar, “Gary Borisy Named Lecture”, University of Wisconsin, Madison
Invited speaker, Annual Meeting of the Molecular Biology Society of Japan (remote)

2022

Invited seminar, Columbia University, NYC (remote)
Invited speaker, Company of Biologists “Cell size and growth, from single cells to the tree of life”, Buxton, UK
Invited seminar, NIH WALS lecture, Bethesda MD
Invited speaker, EMBO workshop “Chromosome Segregation and Aneuploidy” (remote)
Invited seminar, Indian Institute of Science, Bangalore, India (remote)
Keynote speaker, EMBO workshop “Dynamic Kinetochore”, Oslo, Norway
Invited seminar, University of Southern California
Invited speaker, Annual Meeting of the ASCB, Washington, D.C.

2021

Invited seminar, ETH, Switzerland (remote)
Invited seminar, University of California, San Francisco (remote)
Invited seminar, Duke University, NC (remote)
Invited seminar, University of Virginia (remote)
Invited seminar, NIH/NHLBI (remote)
Invited speaker, Mitotic spindle: From living and synthetic systems to theory, Croatia (remote)
Invited seminar, UC Berkeley Nano group (remote)
Invited seminar, UC Berkeley REU program
Invited speaker, EMBO Workshop on Cell Size and Growth Regulation, Israel (remote)
Invited speaker, Salk Cell Cycle Meeting (remote)
Keynote speaker, Polyploidy in development, evolution and disease, MDI (remote)
Invited seminar, Harvard Medical School
Invited seminar, UC Davis
Keith R. Porter lecture, Annual Meeting of the ASCB (remote)
Capstone lecture, UC Berkeley

2020

Invited seminar, University of California, San Diego
Invited lecture, “Cell & Developmental Biology of *Xenopus*”, Cold Spring Harbor Laboratory, NY (canceled)
Invited seminar, Northwestern University (canceled)
Invited speaker, The Socially Distant Centromere (remote)
Keynote speaker, Pew Program in the Biomedical Sciences reunion (remote)
Invited speaker, Advancing Faculty Diversity Symposium, UC Santa Cruz (remote)

2019

Invited seminar, UT Southwestern
Invited seminar, University of Utah
Invited seminar, Stanford University, CA
Invited lecture, “Cell & Developmental Biology of *Xenopus*”, Cold Spring Harbor Laboratory course, NY
Invited seminar, Princeton University, NJ
Invited speaker, International Conference on Polyploidy, Ghent, Belgium
Keynote speaker, “Chromosome Dynamics” Gordon Research Conference
Invited lecture, Physiology course, MBL-Woods Hole, MA
Invited seminar, Crick Institute, London, UK
Invited speaker, Advancing Faculty Diversity: Recruitment, Improved Climate, and Retention, UC Davis

2018

Invited seminar, University of San Francisco, CA
Invited lecture, Cell & Developmental Biology of *Xenopus*, Cold Spring Harbor Laboratory course, NY
Invited seminar, Fred Hutchinson Cancer Research Center, Seattle
Invited speaker, EMBO Workshop on Size and Shape, Bangalore, India
Invited seminar, Indian Institute of Science, Bangalore, India
Invited seminar, Mechanobiology Institute, Singapore

1999-2017 Notable Invitations

2017 Keynote speaker, Boston Area Mitosis and Meiosis Meeting
2017 Keynote speaker, "Motile and Contractile Systems" Gordon Research Conference
2017 Landmark speaker, "Cell Cycle" Jacques Monod Conference
2016 Invited speaker, CDB Symposium "Size and Growth in Development, Kobe Japan
2016 Invited speaker, EMBO workshop "Chromosome Segregation and Aneuploidy", Galway Ireland
2016 Invited speaker, International Congress of Cell Biology, Prague Czech Republic
2015 Symposium speaker, Annual Meeting of the ASCB, "Going the Distance: Determining size and Spacing of Biological Structures", San Diego CA
2015 Keynote speaker, "Evolutionary Cell Biology" conference, Janelia Farm
2015 Lecturer, EMBO Cell Biology Course, Heidelberg Germany
2015 Vice-chair, FASEB Meeting "Mitosis: Spindle Assembly and Function", Big Sky MT
2015 Vice-chair, Gordon Research Conference "Chromosome Dynamics", Waterville Valley VT
2014 Keynote speaker, 15th International *Xenopus* Conference, Asilomar CA
2013 Invited seminar, The Rockefeller University Friday Lecture Series, New York NY
2013 Invited seminar series, University of Wyoming (4 lectures), Laramie WY
2012 Session Chair "Mitosis in Development" FASEB Mitosis Meeting
2011 Chair of Symposium "Self-Organization of Cellular Structures" ASCB Annual Meeting
2011 Session Chair "Mitosis" Salk Cell Cycle Meeting
2008 Session Chair "Chromosomes and the Cell Cycle" CSHL Meeting Dynamic Organization of Nuclear Function
2008 Session Chair "Regulation of Chromosomes" GRC Molecular Cell Biology
2007 Symposium Chair "Cell Cycle" ASBMB
2007 Plenary session speaker 20th Anniversary, Pew Scholars Program in the Biomedical Sciences,
2006 Symposium speaker "Mechanisms in Mitosis" ASCB Annual Meeting
2005 Session Chair "Regulating Chromosome Segregation" Chromosome Dynamics GRC
2003 Session Chair "Mitotic Spindle" GRC Motile and Contractile Systems
2002 Minisymposium Co-chair "Spindle Assembly and Function" ASCB Annual Meeting
2001 Session Chair "Condensation and Cohesion" Chromosome Dynamics GRC
1999 Minisymposium Co-chair of "Spindles and Spindle Poles" ASCB Annual Meeting

Grant reviewing

2023

NIH	DP1: NIH Director's Pioneer Award	Stage 2 Panelist
NSF	Research proposal	Reviewer
ICREA	Scientific performance	Reviewer
Academia Sinica	Early Career Investigator Award	Reviewer

2022

NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
Academia Sinica	Investigator Award	Reviewer

2021		
NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
ETH	ETH Zurich grant proposal	Reviewer
FRM	Foundation Research Medicale	Reviewer
2020		
NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
Eur. Research Council	Synergy Grant	Reviewer
NIH	4D Nucleome Center Awards	Reviewer
Allen Institute	Allen Distinguished Investigators	Reviewer
Croucher Foundation	Senior Research Fellowship	Reviewer
2019		
NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
NSF	Research proposal	Reviewer
ICREA	Scientific performance	Reviewer
Vienna Science Fund	Life Sciences Call	Reviewer
2018		
Research Found. Flanders	Research Proposal	Reviewer
NIH	MIRA: Early Stage Investigator	Study Section Member
Eur. Research Council	Starter Grant	Reviewer
Croucher Foundation	Summer Course applications	Reviewer
2017		
Wellcome Trust	Sir Henry Dale Fellowship	Reviewer
NIH	MIRA: Early Stage Investigator	Study Section Member
NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
Eur. Research Council	Consolidator Grant	Reviewer
2016		
NIH	DP2: NIH Director's Innovator Award	Stage 1 Reviewer
NIH	MIRA: Early Stage Investigator	Study Section Member
NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
Croucher Foundation	Summer Course application	Reviewer
2015		
HFSP	Young Investigator Grant	Reviewer
NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
2014		
NIH	DP1: NIH Director's Pioneer Award	Stage 1 Reviewer
Berta Karlik Professorship, University of Vienna		Reviewer
2013		
NIH	P01 program project grant	Reviewer
NIH	K99 Pathway to Independence	Reviewer
NIH NIGMS	Ad hoc council member	
Peder Sather Center Grants		Reviewer
2012		
NIH	P01 program project grant	Reviewer
NIH	DP2: NIH Director's Innovator Award	Stage 1 Reviewer
NSF	grant	
Agence Nationale de la Recherche		Reviewer
Medical Research Council		Reviewer

France-Berkeley Fund

2011

NIH R15 grants Reviewer

2010

NIH DP2: NIH Director's Innovator Award Stage 1 Reviewer
Radcliffe Institute for Advanced Study Reviewer
France-Berkeley Fund Reviewer

2009

NIH NDT Study Section Ad hoc Reviewer
NIH ARRA grants Reviewer

2004-2008

NIH NDT study section Member

UNIVERSITY AND PUBLIC SERVICE

Department (2011-2023)

2021-Present Co-chair, Department of Molecular and Cell Biology
2021 Co-organizer: CDB Symposium "Across Scales" featuring JEDI ambassadors for Justice, Equity, Diversity, and Inclusion
2020-2021 Weill Hall Building Oversight Committee
2019 Co-organizer: CDB Symposium in honor of Zac Cande
2013-2018 Head, Division of Cell and Developmental Biology
2013-2018 Member MCB Equity Committee
2016 Co-organizer, CDB Symposium "Biological Size Control: From Organisms to Organelles"
2014 MCBcDNA "Research Night" speaker
2012-2013 Second and third year graduate advisor
2011 Organizer, CDB Retreat

University (2011-2023)

2020-Present Core advisor, Faculty Link Program
2020 Search Committee for AVC-Research and Compliance (hired Kairi Williams)
2018-Present Chair, Life Sciences Initiative to advance faculty diversity
2018-2021 Associate Dean of Research Administration, BEST Region
2016 Speaker, "Thriving in Science", UC Berkeley
2015-Present Interviewer and mentor, Fiat Lux and Regents' and Chancellor's Scholar Programs
2015 Search Committee for OLAC Director (hired Greg Lawson)
2011-2014 Co-chair, Vice Chancellor for Research Faculty Committee for Postdoctoral Affairs
2013 Ethics Discussion Session Leader for non-MCB students
2013 Cal Day speaker

UC System

2020, 2021, 2023 Reviewer, President's Postdoctoral Fellowship Program
2014 UC President's Postdoctoral Fellowship Program 30th Anniversary Celebration Workshop
2003-2008 Member, Cancer Research Coordinating Committee

Professional and Community

2023-2024 TAGC Allied Program Committee, Genetics Society of America
2022 External review committee, MCDDB Department, University of Michigan
2022 Proposal reviewer, Envision WiSTEM Program

2021	Contributor, ASCB Newsletter: Can cluster hires move the needle to advance faculty diversity?
2020	Judge, Girls International Three Minute Science Competition
2018	Co-chair, International <i>Xenopus</i> Conference, Seattle
2017, 2018	ASCB "Capitol Hill Day" participant
2017	Chair, Gordon Research Conference "Chromosome Dynamics"
2015	Vice-chair, FASEB Meeting "Mitosis: Spindle Assembly and Function"
2015	Vice-chair, Gordon Research Conference "Chromosome Dynamics"
2015	CRG Cell and Developmental Biology Program evaluation, Barcelona
2015	Biological Sciences Department review, USC
2013	Program Committee, Biophysical Society annual meeting
2012	Fundraising Committee, FASEB Mitosis Meeting
2011	Program Committee, American Society for Cell Biology annual meeting
2010, 2012	Co-organizer, EMBO Conference "Microtubules – Structure, Regulation and Functions"
2007	San Francisco Exploratorium "Meet the Scientist" talk and exhibition
2004, 2005	Physiology Course Faculty, MBL Woods Hole

TEACHING AND MENTORING

Courses Taught

			Instructor effectiveness	
			Score out of 7	
2023 Spring	MCB 133L Cell Biology and Physiology Lab	3 units	33%	6.53
2022 Spring	MCB 133L Cell Biology and Physiology Lab	3 units	33%	6.15
2020 Fall	MCB Fundamentals in Molecular& Cell Biology	6 units	20%	6.07
2019 Spring	MCB 293C Ethics in Science discussion		50%	
2019 Fall	MCB 200 Fundamentals in Molecular& Cell Biology	6 units	20%	6.07
2018 Spring	MCB 290 Graduate seminar	1 unit	100%	6.11
2018 Fall	MCB 200 Fundamentals in Molecular& Cell Biology	6 units	20%	5.87
2017 Fall	MCB 133L Cell Biology and Physiology Lab	3 units	33%	6.09
2017 Fall	MCB 136 Advanced Mammalian Physiology	3 units	17%	5.32
2016 Spring	MCB 130A Cell and Systems Biology	3 units	33%	6.26
2014 Fall	MCB 104 Genetics, Genomics and Cell Biology	3 units	33%	5.93
2013 Fall	MCB 133L Cell Biology and Physiology Lab	4 units	33%	6.54
2013 Spring	MCB 104 Genetics, Genomics and Cell Biology	3 units	33%	6.25
2012 Fall	MCB 133L Cell Biology and Physiology Lab	4 units	33%	6.26
2012 Spring	MCB 104 Genetics, Genomics and Cell Biology	3 units	33%	6.30
2012 Spring	MCB 293C Ethics in Science discussion		50%	6.50
2011 Fall	MCB 133L Cell Biology and Physiology Lab	4 units	33%	6.30
2011 Spring	MCB 104 Genetics, Genomics and Cell Biology	3 units	33%	5.91
2011 Spring	MCB 290 Graduate Seminar	1 unit	100%	6.75
2010 Fall	MCB 133L Cell Biology and Physiology Lab	4 units	33%	6.53
2009 Spring	MCB 130L Cell Biology Lab	4 units	33%	6.53
2008 Fall	MCB 130 Cell Biology	4 units	33%	6.38
2008 Spring	MCB 130L Cell Biology Lab	4 units	33%	6.21
2007 Fall	MCB 130 Cell Biology	4 units	33%	6.00
2006 Spring	MCB 230 Advanced Cell Biology	4 units	33%	5.85
2005 Fall	MCB 130L Cell Biology Lab	4 units	33%	6.01
2005 Spring	MCB 230 Advanced Cell Biology	4 units	33%	5.71
2004 Fall	MCB 290 Graduate Seminar	1 unit	50%	5.79
2004 Fall	MCB 130L Cell Biology Lab	4 units	33%	5.91
2004 Spring	MCB 230 Advanced Cell Biology	4 units	33%	5.69
2003 Fall	MCB 130L Cell Biology Lab	4 units	33%	6.17

		Rebecca Heald University of California, Berkeley		
2003 Spring	MCB 230 Advanced Cell Biology	4 units	33%	6.03
2002 Fall	MCB 290 Graduate Seminar	1 unit	50%	6.18
2002 Fall	MCB 130L Cell Biology Lab	4 units	33%	6.42
2002 Spring	MCB 230 Advanced Cell Biology	4 units	33%	5.51
2001 Fall	MCB 130L Cell Biology Lab	4 units	33%	6.62
2001 Spring	MCB 230 Advanced Cell Biology	4 units	33%	6.33
2000 Fall	MCB 130L Cell Biology Lab	4 units	33%	6.70
2000 Spring	MCB 230 Advanced Cell Biology	4 units	33%	5.39
1999 Fall	MCB 130L Cell Biology Lab	4 units	33%	6.54
1999 Spring	MCB 230 Advanced Cell Biology	4 units	33%	6.33
1998 Fall	MCB 130L Cell Biology Lab	4 units	33%	6.44

Research Mentoring

Undergraduates

2021-Present Jon Sulit

Past 10 years

2022-2023	Christine Wan	Manuscript co-author
2022-2023	Gillian Oaks	Manuscript co-author
2021-2022	Hilda Cabrera	Manuscript co-author
2021-2022	Shi Lin	Now a research assistant, Heald lab
2019-2022	Julianne Bartz	Manuscript co-author, applying to medical school
2021	Den Lipata	NSF REU summer student
2018-2019	Gautham Pavar	Applying to medical school
2014-2018	Tracy Lou	Now a lab research associate
2017-2018	Sophie Kawada	Applying to nursing school
2016-2018	Michael Fitzsimmons	Now in veterinary school
2017	Angeline Chemel	NSF REU summer student, now in graduate school
2017	Jae De Leon	Bridges to Baccalaureate summer student
2016-2017	Nikita Bhatia	URAP student
2016	Karen Shih	Now in graduate school
2015-2016	Alan Kong	Exchange student, Hong Kong UST
2015	Stephan Ramos	NSF REU summer student
2015	Bereket Gebreslasie	Bridges to Baccalaureate summer student
2014-2015	Xiaoran Guo	Exchange student, Lanzou University, now a PhD
2014	Scott Aposhian	Bridges to Baccalaureate summer student
2014	Mahdika Johnson	NSF REU summer student
2013-2016	Rachael Acker	Manuscript co-author, now an MD
2013	Nerissa Ignacio	Bridges to Baccalaureate summer student
2012	Samuel Olanrewaju	Bridges to Baccalaureate summer student
2012	Tiffany Myers	NSF REU summer student
2010-2013	Evan Whitehead	Manuscript co-author

Graduate Students

2018-Present	Guadalupe Sepulveda
2022-Present	Cordell Clark
2022-Present	Megan Onyundo
2022-Present	Khansaa Maar

Awards

CRCC Fellowship
Gilliam Fellowship
UC Berkeley Mentored Research Fellowship

Past

2017-2022	Maiko Kitaoka
2014-2020	Kelly Miller
2012-2017	Andrew Grenfell
2008-2014	Kara Helmke
2007-2013	Stephen Bird
2007-2010	Rose Loughlin
2005-2010	Kieren Patel
2003-2010	Benjamin Freedman
2001-2005	Renee Deehan Kenney
2000-2005	Tom Maresca
1999-2004	Sharat Gadde
1998-2003	Sadie Wignall
1998-2002	Priya Budde

Postdoctoral fellows

2022-Present	Gabriel Cavin-Mesa
2020-Present	Xiao Liu
2019-Present	Helena Cantwell
2018-Present	Clotilde Cadart
2017-Present	Coral Zhou

Past

2015-2021	Minxuan Sun
2016-2020	Ambika Nadkarni
2014-2019	Christopher Brownlee
2015-2018	Xiao Zhou
2013-2017	Romain Gibeaux
2015-2016	Lauren Slevin
2012-2016	Andrew Lane
2012-2015	Marina Ellefson Crowder
2010-2014	Matthew Good
2009-2014	Magdalena Strzelecka
2009-2011	Esther Kieserman
2008-2013	Jeremy Wilbur
2007-2013	Anne-Lore Schlaitz
2007-2011	Daniel Levy
2006-2010	Blake Riggs
2004-2010	David Halpin
2003-2008	Jonathan Soderholm
2003-2006	Michael Blower
2002-2006	Eva Hannak
2001-2008	Petr Kalab
2001-2005	Aaron Van Hooser
2000-2003	Ahna Skop

Grant Support

R35 GM118183

Role: PI

4/01/21 – 3/31/26

Mechanisms of Mitosis and Size Control in *Xenopus*

This Maximizing Investigator Research Award (MIRA) supports our overall research program.

Current Position

Postdoctoral fellow, MIT
Scientist, Bio-Rad
Postdoctoral fellow, University of Minnesota
Director, Freshman Research Initiative, UT Austin
Field Applications Scientist, Thermo-Fisher
Senior Director, Moderna
President and CEO, Opticent Health
Associate Professor, University of Washington
VP of Computational Biology, QuartzBio
Associate Professor, UMASS Amherst
Teacher, Moraga High School, CA
Associate Professor, Northwestern University
Foundation & Corporate Relations Officer, Whitehead Inst

Awards

Damon Runyon Cancer Research Fellowship

EMBO Long Term Fellowship

Jane Coffin Childs Fellowship

Current Position

President and Chief Accessibility Officer, Sun Access
Postdoctoral researcher, Stanford University
Assistant Professor, Stony Brook University
Scientific Programmer, Caribou Bioscience
CNRS group leader, University of Rennes
Genetic Counselor, Swedish Medical Center
Machine Learning Engineer, Square
Associate Teaching Professor, UC Davis
Associate Professor, University of Pennsylvania
Data Scientist, Roche, Munich, Germany
Senior Biosystems Applications Manager, Nikon
Senior Director of Protein Science, Relay Therapeutics
Group leader, ZMBH/University of Heidelberg
Associate Professor, University of Wyoming
Associate Professor, San Francisco State University
Paramedic fireman, San Francisco CA
Associate Professor, Yonsei University, Seoul, Korea
Associate Professor, Boston University
Patent agent, REDL Life Sciences, Vienna, Austria
Staff Scientist, Johns Hopkins University
Senior Director, Sensorium Therapeutics, Boston
Professor, University of Wisconsin

Publications

1. Zhou CY, **Heald R.** (2023) Principles of genome activation in the early embryo. *Curr Opin Cell Biol*, in press.
2. Zhou CY, Dekker B, Liu Z, Cabrera H, Ryan J, Dekker J, **Heald R.** (2023) Mitotic chromosomes scale to nucleocytoplasmic ratio and cell size in *Xenopus*. *eLife*, <https://doi.org/10.7554/eLife.84360>
3. Cadart C, Bartz J, Oaks G, Liu Z, **Heald R.** (2023) Polyploidy in *Xenopus* lowers metabolic rate by decreasing total cell surface area. *Curr Biol*, 33, 1744-1752. PMC10184464
4. Sun M, Amiri H, Tong AB, Shintomi K, Hirano T, Bustamante C, **Heald R.** (2023) Monitoring the compaction of single DNA molecules in *Xenopus* egg extract in real time. *PNAS* 120: e2221309120. PMC10041109
5. Miller K, Cadart C, **Heald R.** (2022) Dodecaploid *Xenopus longipes* provides insight into the emergence of size scaling relationships during development. *Curr Biol* 33, 1327-1336.
6. Kitaoka M, Smith OK, Straight AF, **Heald R.** (2022) Molecular conflicts disrupting centromere assembly contribute to *Xenopus* hybrid inviability. *Curr Biol* 32, 3939-3951.
7. Nadkarni A, **Heald R.** (2022) Reconstitution of muscle cell microtubule organization in vitro. *Cytoskeleton*, 78, 492-502. PMC9329249
8. Smith OK, Limouse C, Fryer KA, Teran NA, Sundararajan K, **Heald R.**, Straight A. (2021) Identification and characterization of centromeric sequences in *Xenopus laevis*. *Genome Res* 31, 958-967. PMC8168581
9. Miller KE, Brownlee C, **Heald R.** (2020) The power of amphibians to elucidate mechanisms of size control and scaling. *Exp Cell Res* 392, 112036. PMC7246146
10. Zhou CY, **Heald R.** (2020) Emergent properties of mitotic chromosomes. *Curr Opin Cell Biol* 64, 43-49. PMID: 32151949
11. Miller KE, Session AM, **Heald R.** (2019) Kif2a scales meiotic spindle size in *Hymenochirus boettgeri*. *Curr Biol* 29, 3720-3727. PMC6832855

Dispatch: Hartsough KE, Walczak CE. (2019) Cell division: Tailoring a swiftly scaling spindle. *Curr Biol* 29, R1135-R1137. PMID 31689400

12. Cadart C, **Heald R.** (2019) Cell Biology: The health hazards of super-sizing. *Curr Biol* 29, 289-292.
13. Brownlee C, **Heald R.** (2019) Importin alpha partitioning to the plasma membrane regulates intracellular scaling. *Cell* 176, 805-815. PMC6368448

Research Highlight: Strzyz P. (2019) How cells keep scale. *Nat Rev Mol Cell Biol* 20, 136. PMID: 30683908

14. Gibeaux R, **Heald R.** (2019) Generation of *Xenopus* haploid, triploid and hybrid embryos. *Methods Mol Biol* 1920, 303-315. PMID 30737699
15. Gibeaux R, Miller K, Acker R, Kwon T, **Heald R.** (2018) *Xenopus* hybrids provide insight into cell and organism size control. *Front Physiol* 9, 1758. PMC6288844
16. Brownlee C, **Heald R.** (2018) The incredible shrinking spindle. *Dev Cell* 45, 421-423. PMID 29787705
17. Wilsey HR, Walentek P, Exner CRT, Xu Y, Lane AB, Harland RM, **Heald R.**, Santama N. (2018) Katanin-like protein Katnal2 is required for ciliogenesis and brain development in *Xenopus* embryos. *Dev Biol* 442, 276-287. PMID 30096282
18. **Heald R.** (2018) A lab co-op helps young faculty members to thrive. *Nature* 556, 409. PMID 29686370
19. **Heald R.** and Gibeaux R. (2018) Subcellular scaling: does size matter for cell division? *Curr Opin Cell Biol* 52, 88-95. PMC59889040
20. Kitaoka M, **Heald R.**, Gibeaux R. (2018) Spindle assembly in the Marsabit clawed frog, *Xenopus borealis*. *Cytoskeleton* 75, 244-257. PMC6019172
21. Gibeaux R and **Heald R.** (2018) The use of cell-free *Xenopus* extracts to investigate cytoplasmic events. *Cold Spring Harb Protoc* doi: 10.1101/pdb.top097048. PMID 29980587



22. Good MC, **Heald R.** (2018) Preparation of cellular extracts from *Xenopus* eggs and embryos. *Cold Spring Harb Protoc* doi: 10.1101/pdb.prot097055. PMID 29437998
23. Gibeaux R, Acker R, Kitaoka M, Georgiou G, van Kruijsbergen I, Ford B, Marcotte EM, Nomura DK, Kwon T, Veenstra GJC, **Heald R.** (2018) Paternal chromosome loss and metabolic crisis contribute to hybrid inviability in *Xenopus*. *Nature* 553, 337-341. PMC5988642

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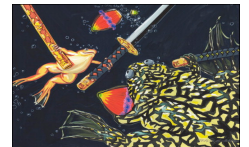
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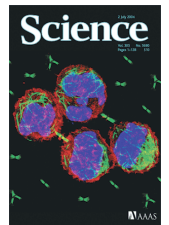


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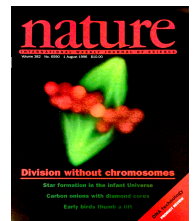
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