

CURRICULUM VITAE

Melinda R. Dwinell PhD

Professor
Department of Physiology

OFFICE ADDRESS:

Basic Science Building
8701 Watertown Plank Rd
Milwaukee, WI 53226

EDUCATION:

09/1986 - 05/1990 B.S., University of Michigan, Ann Arbor, MI
08/1990 - 05/1992 M.S., University of Wisconsin, Madison, WI
06/1992 - 05/1996 Ph.D., University of Wisconsin, Madison, WI.

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

09/1996 - 06/1999 Postdoctoral Trainee, Department of Medicine, Division of Physiology, University of California, San Diego, La Jolla, CA

MILITARY SERVICE:

N/A

FACULTY APPOINTMENTS:

07/1999 - 04/2001 Project Scientist, Department of Medicine, University of California, San Diego, La Jolla, CA
04/2001 - 06/2011 Assistant Professor, Department of Physiology, Medical College of Wisconsin, Milwaukee, WI
07/2011 - 06/30/2019 Associate Professor, Department of Physiology, Medical College of Wisconsin, Milwaukee, WI
07/01/2019 - Present Professor, Physiology, Medical College of Wisconsin

ADMINISTRATIVE APPOINTMENTS:

2007 - 2010 Scientific Center Administrator, Human & Molecular Genetics Center
2015 - 2017 Interim Scientific Administrator, Human & Molecular Genetics Center
01/2016 - 06/2016 Interim Business Administrator, Human & Molecular Genetics Center
07/2017 - 02/2019 Associate Director of Education and Academic Relations, Genomic Sciences and Precision Medicine Center, Medical College of Wisconsin

EDUCATIONAL ADMINISTRATIVE APPOINTMENTS:

01/2015 - 2019 Director of the Masters in Medical Physiology Program, Medical College of Wisconsin
09/2017 - Present Vice Chair and Secretary, Curriculum and Evaluation Committee (Medical School), Medical College of Wisconsin
04/2019 - Present Course Director, M1 Medical Physiology Course, Medical College of Wisconsin
02/01/2022 - Present Director of Integration, Phase 1, Basic Science, MCW

RESEARCH ADMINISTRATIVE APPOINTMENTS:

N/A

AWARDS AND HONORS:

1993 - 1996 Predoctoral Fellowship: National Heart, Lung and Blood Institute Grant HL 07654, University of

Wisconsin, Madison, WI.
1995 Veterinary Science Travel Award, University of Wisconsin, Madison, WI.
1996 - 1999 Postdoctoral Fellowship: National Heart, Lung and Blood Institute Grant HL 07212 University of California, San Diego, La Jolla, CA.
2000 - 2003 Parker B. Francis Fellowship (July 1, 2000- Jun 2003)
2000 Frontiers in Modeling and Control of Breathing Trainee Award (Oxford Conference, Cape Cod, MA)
2015 - 2016 Medical College of Wisconsin Leadership Academy, MCW and the University of Wisconsin-Milwaukee Sheldon B. Lubar School of Business
2016 Outstanding Graduate School Teacher, Medical College of Wisconsin, 2015-2016 academic year.
06/01/2022 - Present Eminent Scholar, Medical College of Wisconsin

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

1991 - Present American Physiological Society
1993 - 1995 International Chemoreceptor Society
1994 - 2013 Society for Neuroscience
2008 - 2015 International Society for Computational Biology
2013 - Present American Heart Association

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorial Board
2013 - 2015 Frontiers in Genomic Physiology
2015 - Present Scientific Reports (Nature Publishing Group)
Journal Review
2005 Respiratory Physiology and Neurobiology
2009 - Present Physiological Genomics
2010 Bioinformatics
2010 Mammalian Genome
2010 - Present Briefings in Bioinformatics
2011 - Present Database
2013 - 2014 Nucleic Acids Research Database issue
2013 F1000Prime Reports
2013 Expert Opinion on Drug Discovery
2014 - Present PlosOne
2015 - Present Scientific Reports
2017 - Present BMC Cardiovascular Disorders
07/2020 - Present Function

LOCAL/REGIONAL APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2002 - 2006 Oral presentation reviewer, Summer Program in Undergraduate Research, Medical College of Wisconsin
2009 Community Engagement Committee, Human & Molecular Genetics Center, Medical College of Wisconsin
2010 Member, Office of Research Innovations - Task Force on Mentoring, MCW
2010 - 2015 Member, Food Service Committee, MCW
03/2011 Committee member, Junior Faculty Committee - Basic Science, Liaison Committee on Medical Education (LCME) Site Visit, Medical College of Wisconsin
2011 Panel member, "Strategies for Success in Science: A Balancing Act", Graduate Student Luncheon, Women's Faculty Council, Medical College of Wisconsin
2011 Member, eBridge Focus Group, MCW Office of Research
2011 - 2014 Member, Nomination Committee, MCW
2011 - Present Member, Research Mentoring Committee, MCW
2011 Reviewer, Skin Cancer Research Award, FMLH/MCW Skin Cancer Research Fund, Medical College of Wisconsin
2012 - 2016 Poster reviewer, Medical Student Research Day, Medical College of Wisconsin
2012 - Present Poster reviewer, MCW Research Day, Medical College of Wisconsin
2012 - 2014 Admissions and Support Work Group Member, Community Medical Education Program Student Recruitment, MCW

2013 Panel member, "How to Identify a Good Mentor", Graduate Student Luncheon, Women's Faculty Council, Medical College of Wisconsin

2013 - 2014 Honors thesis reviewer, Medical Student Honors Thesis (M4 candidate), MCW

2013 - 2014 Grant reviewer, CTSI 2014 Pilot Award program, MCW

2013 - Present member of IACUC Institutional Policies and Responsibilities subcommittee, IACUC Semi-Annual Program Review, MCW

2014 - 2017 Member, Women's Faculty Council, MCW

2015 - 2016 Member, Search Committee for Department Chair for Microbiology & Molecular Genetics, MCW

2015 - 2016 Oral presentation reviewer, Summer Program in Undergraduate Research (SPUR), Medical College of Wisconsin

2015 - 2016 Oral presentation reviewer, Diversity Summer Health-related Research (DSHREP), Medical College of Wisconsin

2015 - 2017 MCW, Graduate Studies Council Curriculum and Programs Committee, MCW Graduate School

2016 Honors thesis reviewer, Medical Student Honors Thesis (M4 Candidate), MCW

2016 - Present Search Committee for Center Director, Human & Molecular Genetics Center, member

2016 - Present Member, Curriculum & Evaluation Committee: M1-M2 subcommittee, MCW Medical School

2016 Member, Search Committee for Chief Diversity and Inclusion Officer, MCW

2017 - Present Secretary/Vice Chair, Executive Curriculum & Evaluation Committee, MCW Medical School

2018 - 2019 Chair, Curriculum & Program Committee, Graduate School, MCW Graduate School

2019 - Present Curriculum Exploration Steering Committee, MCW School of Medicine

2020 - Present Integration of foundational and clinical science (Principle 1) subcommittee, Curriculum Redesign Task Force, MCW School of Medicine

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2003 - 2005 Member, Career Opportunities in Physiology, American Physiological Society

2004 Grant Reviewer, EPSCoR Program, South Carolina Department of Defense

2006 - 2017 Ad hoc reviewer for Caroline and Susan/Frances A. Hellebrandt Opportunity Award, Women in Physiology, American Physiological Society

2011 Grant Reviewer, Genomic Resources Grants for Community Resource Projects (PAR-11-095), NHGRI

2012 Grant Reviewer, Biodata management and analysis (BDMA): study section, NIH

2013 - 2017 Reviewer, Undergraduate Summer Research Fellowship awards, Career Opportunities in Physiology, American Physiological Society

2013 Grant Reviewer, Lung 2 Spring Committee, American Heart Association

2013 - 2015 Committee member, Women in Physiology, American Physiological Society

2013 Grant Reviewer, Lung 2 Fall Committee, American Heart Association

2014 - 2016 Co-chair, Lung 2 study section, American Heart Association

2014 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (2015/01 ZRG1 BBBP-Y (45) R), September 2014, NIH

2014 - 2015 Reviewer, Bodil M. Schmidt-Nielsen Award, Women in Physiology, American Physiological Society

2015 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (2015/10 ZRG1 BBBP-Y(45), September 2015, NIH

2015 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (ZRG1 BST-N(55)R), June 2015, NIH

2015 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (ZRG1 BST-A(40)), December 2015, NIH

2015 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (2015/10 ZRG1 BBBP-Y(45), May 2015, NIH

2016 Grant Reviewer, Lung 1 Fall Committee, American Heart Association

2016 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (2016/10 ZRG1 BBBP-Y(45)), R25 applications, May 2016, NIH

2016 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (ZRG1 BBBP-Y 45 R), January 2016, NIH

2016 Grant Reviewer, NIH reviewer for Special Emphasis Panel/Scientific Review Group (2016/ZRG1 BST-K(30)I), S10 applications, November 2016, NIH

2016 Grant Reviewer, NIH reviewer for Special Emphasis Panel/Scientific Review Group (2016/05 ZRG1

BST-U(55)), R24 applications, February 2016, NIH
 2017 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (2017/05 ZRG1 BST-J(55)), R25 applications for RFA-ES16-001: BD2K Research Education Curriculum Development, February 2017, NIH
 2017 Grant Reviewer, Special Emphasis Panel/Scientific Review Group (2017/05 ZRG1 BST-H(50)), U01 applications for RFA-LM-17-001: Enhancing the Efficiency and Effectiveness of Digital Curation for Biomedical Big Data, February 2017, NIH
 2017 Grant Reviewer, Cancer Center Basic Science Pilot Grant, MCW
 2018 Temporary Member, Genetics of Health and Disease (GHD) Study Section, NIH
 2018 - Present Member, External Advisory Board, NIDA Core Center of Excellence in Omics, Systems Genetics, and the Addictome (P30DA044223)
 05/2019 Grant reviewer, Special Emphasis Panel ZHG1 HGR-M(01), Genomic Resources, NIH National Human Genome Research Institute
 10/2019 Grant Reviewer, Special Emphasis Panel ZLM1 YW-R(01), Digital Curation, NIH National Library of Medicine
 05/2020 Chair, Special Emphasis Panel ZLM1 YW-R(01), Digital Curation, NIH National Library of Medicine
 07/2020 Grant Reviewer, Special Emphasis Panel, ZRG1 IMST-U(50), Pilot Centers for Precision Disease Modeling, NIH

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:

Active

Peer Review

Title:	Dissemination and Coordination Center for the SCGE Consortium
Source:	NIH/ORIP (1U24HG010423-01)
Role:	PI
Direct Funds:	\$4,220,237 (annual direct cost; \$15,158,442 (Total costs)
Title:	Hybrid Rat Diversity Program
Source:	NIH/ORIP (1R24OD024617-01A1)
Role:	PI
Direct Funds:	\$499,946 (annual direct cost)
Title:	Sry transgenic rats for investigation of XX vs XY differences in phenotypes
Source:	NIH/ORIP (1R21OD026560-01)
Role:	MPI (Arnold UCLA PI, Dwinell MPI, Geurts MPI)
Direct Funds:	\$150,000 (annual direct cost)
Title:	Rat Genome Database
Source:	NIH (5R01 HL64541), NHLBI
Role:	Co-Investigator (Kwitek PI)
Direct Funds:	\$1,345,200 (annual direct cost)

Prior

Peer Review

Title:	Vaso-hormonal mechanisms in hypertension
Source:	NIH/NHLBI (2P01H051952-21A1)
Role:	subcontract PI (Ferrario PI)
Direct Funds:	\$24,131 (subcontract annual direct)

Title:	The Virtual Physiological Rat Center for the Study of Complex Disease
Source:	NIH/NIGMS
Role:	Co-Investigator, Education & Dissemination (Beard PI)
Direct Funds:	\$2,600,000 (total cost, annual)

Title:	Integration of Phenotype Data from Multiple Centers Using Ontologies
Source:	NIH/NHLBI (1R01HL094271)
Role:	Principal Investigator
Direct Funds:	\$1,137,400 (total cost)

Title:	Mechanistic characterization of genes for hypertension and renal disease
Source:	NIH/NHLBI (5RC2HL101681)
Role:	Co-Investigator
Direct Funds:	\$6,648,467 (total cost)

Title:	Development of data ontologies for integrating multi-center cardiovascular studies
Source:	Washington University sub (NIH, NHLBI)
Role:	Subcontract PI (5R01HL094286)
Direct Funds:	\$279,488 (total cost)

Title:	Wisconsin Center of Excellence in Genomic Science (CEGS)
Source:	NIH/NHGRI (5P50HG004952)
Role:	Co-Investigator
Direct Funds:	\$11,940,111 (total cost)

Title:	Development of Bioinformatic Resources to Transfer Biological Information Across Species
Source:	USDA/subcontract through Iowa State University
Role:	Subcontract PI
Direct Funds:	\$207,609 (total cost)

Title:	Gene Ontology Consortium
Source:	Jackson Laboratory (NIH/ NHGRI)
Role:	Subcontract PI
Direct Funds:	\$187,005 (total cost)

Title:	Knock-out rats for physiologic genomics
Source:	NIH (U01 HL66579), NHLBI, Bethesda, MD
Role:	Education Component Director/Bioinformatics Component Director/Program Coordinator
Direct Funds:	\$799,007 (annual direct)

Title:	Development and plasticity in respiratory control
Source:	American Lung Association (RG-142-N)

Role:	Principal Investigator
Direct Funds:	\$70,000 (total cost)
Title:	Physiogenomics of stressors in derived consomic rats
Source:	NIH (U01 HL066579), NHLBI
Role:	Co-Investigator, Phenotyping, Education
Direct Funds:	\$3,499,926 (Annual total)
Title:	Mechanisms of Neural Plasticity in Ventilatory Acclimatization to Hypoxia
Source:	Francis Families Foundation
Role:	Principal Investigator
Direct Funds:	\$120,000
Title:	Gene Targeted Rat Resource for the study of complex disease
Source:	NIH/NHLBI (R24HL114474)
Role:	PI (effective 6/17/15, Co-Investigator prior to 6/17/15)
Direct Funds:	\$1,186,588 (annual direct)
Title:	FMRI Studies of cerebrovascular structure and function in low-renin hypertension
Source:	NIH (1R56 NS088531-01A1), NHLBI
Role:	Co-Investigator (Pawela PI)
Direct Funds:	\$319,000 (direct cost)

Non-Peer Review

Title:	Models of Salt Sensitive Hypertension
Source:	Merck Sharp & Dohme Corp.
Role:	PI
Direct Funds:	\$118,321
Title:	Development of Transgenic Rat Models of Chronic Kidney Disease
Source:	Merck Sharp & Dohme Corp.
Role:	PI
Direct Funds:	\$252,864
Title:	Development of an Fmr1 Knockout Rat Model
Source:	Simons Foundation
Role:	PI
Direct Funds:	\$48,214

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

Local

Dwinell, M.R., Neural plasticity of the peripheral chemoreflex, Department of Physiology, Medical College of Wisconsin, Milwaukee WI, 12/2000

Dwinell, M.R., Development of the control of breathing in piglets., Animal Resource Center Medical College of Wisconsin, Milwaukee WI, 02/12/2003

Dwinell, M.R., Ventilatory control in inbred strains of rats, Department of Physiology, Medical College of Wisconsin, Milwaukee WI, 03/05/2003

Dwinell, M.R., Consomic Rat Models for Respiratory Control, Department of Physiology, Medical College of

Wisconsin, Milwaukee WI, 03/01/2006

Dwinell, M.R., Who's on first? Deciphering chromosome 1 using consomic rats, Department of Physiology, Medical College of Wisconsin, Milwaukee WI, 03/14/2007

Dwinell, M.R., Phenotypes and Disease Models: Lessons from the PGA., Department of Physiology, Medical College of Wisconsin, Milwaukee WI, 01/28/2009

Dwinell, M.R., Tools to identify animal models for complex disease., Human & Molecular Genetics Center, Medical College of Wisconsin, Milwaukee WI, 08/06/2009

Dwinell, M.R., New opportunities using rat models to study complex disease., Nephrology Research Conference, Dept. of Medicine, Medical College of Wisconsin, Milwaukee WI, 12/14/2010

Dwinell MR, Physiological Genomics using rat models, Pulmonary Fellow Orientation to Research, Medical College of Wisconsin, 02/11/2011

Dwinell, M.R., Making sense of Phenotypes: Developing an Integrated Web Portal for Phenotype Data., Human & Molecular Genetics Center, Medical College of Wisconsin, Milwaukee WI, 11/03/2011

Dwinell, M.R., Making sense of phenotypes: Integrating data for identifying disease models., Dept. of Physiology seminar series, Medical College of Wisconsin, Milwaukee WI, 10/17/2012

Dwinell, M.R., Rat models to study complex disease., Pulmonary Fellow Orientation to Research, Medical College of Wisconsin, Milwaukee WI, 02/07/2013

Dwinell, M.R., Identifying animal models for disease using molecular and physiological phenotypes., Cancer Cell Biology Research Forum, Cancer Center, Medical College of Wisconsin, Milwaukee WI, 03/28/2013

Dwinell, M.R., Creation and use of genetically modified animal models to study complex disease., Pulmonary Fellow Orientation to Research, Medical College of Wisconsin, Milwaukee WI, 02/07/2014

Dwinell, M.R., Pfister S, Sood R, Schmainda K., "Running a Lab", ADVANCE: From Postdoc to Faculty, Medical College of Wisconsin, Milwaukee WI, 11/02/2015

Dwinell, M.R., "Budgets", ADVANCE: From Postdoc to Faculty, Medical College of Wisconsin, Milwaukee WI, 01/06/2016

Dwinell, M.R., "Budgeting", ADVANCE: From Postdoc to Faculty, Medical College of Wisconsin, Milwaukee WI, 01/13/2017

Dwinell, M.R., "Demystifying the process: How a sample becomes genomic data", Conversations with Scientists, Advancing a Healthier Wisconsin 2018 Conversations with Scientists series, Milwaukee WI, 04/11/2018

Dwinell, M.R., Hybrid Mouse Rat Diversity Panel, Genomic Sciences & Precision Medicine Center, Medical College of Wisconsin, Milwaukee WI, 10/10/2018

Dwinell MR, Rapid and Open Access to Data: The Ethics of Electronic Lab Notebooks, Data Repositories and Pre-Publications, Spotlight on Science, Medical College of Wisconsin, Milwaukee WI, 10/14/2019

Dwinell MR, Hybrid Rat Diversity Panel: A Rat Resource for Complex Traits, Cardiovascular Center Research Retreat, MCW, Boerner Botanic Garden, 10/18/2019

Dwinell MR and Pfister S, Running a Lab, CVC Trainee Development Seminar, Medical College of Wisconsin, 02/05/2020

Dwinell MR, Budgets, CVC Trainee Development Seminar, Medical College of Wisconsin, 03/11/2020

Regional

Dwinell, M.R., Hypoxic and hypercapnic ventilatory responses in inbred strains of rats, Kemp Station - Midwest Control of Breathing meeting, Minoqua, WI, 07/2002

National

Dwinell, M.R., H. Kazemi, J. Lam and F.L. Powell., Central amino acid neurotransmitters and ventilatory output and metabolism during acute hypoxia in anesthetized rats, Oxford Conference, Frontiers in Modeling and Control of Breathing, Cape Cod, MA, 2000

Dwinell, M.R., The Use of Designer Rat Models to Understand Heart, Lung, Blood and Kidney Disorders, American Association for Laboratory Animal Science (AALAS) National Meeting, Tampa Bay, FL, 10/21/2004

Dwinell, M.R. & Andrade F.H., International Collaborations: Science Knows No Boundaries., XXXV International Congress of Physiological Sciences, San Diego, CA, 04/03/2005

Dwinell, M.R. & H.J. Jacob., Building a phenome project: a physiological genomics approach to heart, lung, blood and sleep disorders in the rat., Tutorial Lecture at Morehouse School of Medicine workshop ("Genomic Applications in Heart, Lung, Blood and Sleep Disorders Research"), Atlanta, GA,

05/02/2005

- Dwinell, M.R. & H.J. Jacob., Building a phenome project: a physiological genomics approach to heart, lung, blood and sleep disorders in the rat., Tutorial Lectures at From Genome to Disease II Symposium, Bethesda, MD, 07/19/2005 - 07/20/2005
- Dwinell, M.R., Building a phenome project: a physiological genomics approach to heart, lung, blood and sleep disorders in the rat., Keynote presentation at 20th Anniversary RCMI Conference, Morgan State University, Baltimore, MD, 09/30/2005
- Dwinell, M.R., Rat Genome Database Workshop: Phenotypes and Models Portal., Rat Genomics and Models meeting, Cold Spring Harbor, NY, 12/02/2005 - 12/05/2005
- Dwinell, M.R., Rat Consomic Panels and ENU Mutagenesis. PGA Traveling Tutorial, Day 2 Quantitative Trait Genetics, Washington University, St. Louis, MO, 05/15/2006 - 05/16/2006
- Dwinell, M.R., Target Organ Damage in Hypertension: Genetic and epigenetic susceptibilities., NHLBI Working Group, Bethesda, MD, 06/25/2008
- Dwinell, M.R., Integration of phenotype data using multiple ontologies for disease model identification., Bullet presentation, 2012 Summit on Translational Bioinformatics, San Francisco, CA, 03/19/2012 - 03/20/2012
- Dwinell, M.R., Bioinformatic network/pathway analyses - Finding where your favorite genes/proteins hangout., Workshop presentation, Experimental Biology, 2013, Boston, MA, 04/20/2013
- Dwinell, M.R., Animal Models of Lung Disease: Rat genomics and bioinformatics to understand disease., NHLBI working group, Bethesda, MD, 09/26/2013
- Dwinell, M.R. and Shimoyama, M., Toxicogenomics Data at the Rat Genome Database. Raleigh, NIEHS Keystone Lecture, Raleigh, NC, 03/17/2014
- Dwinell, M.R., Chromosome-dependent regulation of cardiovascular function, NHLBI Sex Bias in Cardiovascular Research Working Group, Bethesda, MD, 09/22/2014
- Dwinell, M.R., Genomic and Phenotypic Rat Strain Profiles for Disease Model Identification. Physiological Genomics Workshop presentation, Experimental Biology 2015, Boston MA, 03/28/2015
- Dwinell, M.R., Unraveling disease through rat models using innovation and informatics., School of Pharmacy University of Colorado Anschutz Medical Campus, Denver, CO, 10/07/2015
- Dwinell, M.R., Unraveling disease through rat models using innovation and informatics. Institute for Behavioral Genetics, University of Colorado Boulder, Boulder CO, 10/08/2015
- Dwinell, M.R., Rat Strain Profiles: the good, the bad, and the ugly., Rat Genomics and Models meeting, Cold Spring Harbor Laboratory, NY, 12/11/2015
- Saba, L, Dwinell, M.R., Tabakoff B., National Rat Genetic Resource Program., NIH ORIP, Bethesda, MD, 12/14/2015
- Dwinell, M.R., Unraveling disease through rat models using innovation and informatics, Ferris State University, Big Rapids, MI, 03/18/2016
- Dwinell, M.R., Women in Physiology Strategic Planning Meeting, American Physiological Society, Bethesda, MD, 05/02/2016 - 05/03/2016
- Dwinell, M.R., Development of tagged CMA1 overexpression in SD rat model., Wake Forest University, Winston-Salem, NC, 10/05/2017
- Dwinell, M.R., The Rat Genome Database and the Variant Visualizer., University of Colorado, Skaggs School of Pharmacy and Pharmaceutical Sciences, Denver, CO, 07/23/2018
- Dwinell, MR, Shimoyama M, SCGE Dissemination and Coordinating Center, NIH Somatic Cell Genome Editing Consortium Kickoff Meeting, Bethesda, MD, 12/10/2018
- Dwinell MR, Hybrid Rat Diversity Program (HRDP), Experimental Biology, Physiological Omics Group Symposium, Orlando, FL, 04/06/2019

International

- Dwinell, M.R., Janssen PL, Pizzaro J, Bisgard GE., Increased carotid body CO2 sensitivity after ventilatory acclimatization to hypoxia in awake goats, International Chemoreceptor Society, Santiago, Chile, 1999
- Dwinell MR, Phenotypes and Models Portal at RGD: Providing an entrée to genomics for physiologists., Cold Spring Harbor Rat Genomics and Models Meeting, Wellcome Trust Center, Hinxton UK, 12/2008

PEER REVIEWED WORKSHOPS/PRESENTATIONS:

Regional

- Dwinell, M.R., Couples that Work in Medicine and/or Science - How do you make it work?, The Medical

National

- Dwinell, M.R., The Use of Designer Rat Models to Understand Heart, Lung, Blood and Kidney Disorders., Special Topic Lecture at the American Association for Laboratory Animal Science (AALAS) National Meeting, Tampa Bay, FL, 10/21/2004
- Dwinell, M.R., Building a phenome project: a physiological genomics approach to heart, lung, blood and sleep disorders in the rat., Keynote presentation at 20th Anniversary RCMI Conference, Morgan State University, Baltimore, MD, 09/30/2005
- Dwinell, M.R., Mentoring for Diverse Careers: Mentor and Protégé Perspectives., Experimental Biology 2015, Symposium hosted by APS Women in Physiology, Boston MA, 04/01/2015

COMMITTEE SERVICE:

Medical College of Wisconsin

- 07/01/2005 - 06/30/2008 Department of Physiology representative, Faculty Council, Medical College of Wisconsin
- 2010 committee member, Task Force on Mentoring, Office of Research, Medical College of Wisconsin
- 2010 - 2015 Committee member, Food Service Committee, Medical College of Wisconsin
- 2011 Committee member, Faculty Council Nominating Committee, Medical College of Wisconsin
- 2011 - Present Committee Member, Research Mentoring Committee, Office of Research, Medical College of Wisconsin
- 2012 - 2015 Committee member, Community Medical Education Program: Student Recruitment, Admissions and Support Work Group, Medical College of Wisconsin
- 07/01/2014 - 06/30/2017 Committee Member, Council for Women's Advocacy (formerly Women's Faculty Council), Medical College of Wisconsin
- 2015 - 2016 Committee Member, Search committee for Chair of Microbiology & Molecular Genetics, Medical College of Wisconsin
- 2015 - Present Committee Member, Curriculum and Programs Committee, Graduate School, Medical College of Wisconsin
- 2016 - Present Committee Member, Curriculum and Evaluation Committee, M1-M2 subcommittee, Medical College of Wisconsin
- 2016 Committee Member, Search Committee for Director of Human & Molecular Genetics Center, Medical College of Wisconsin
- 2016 Committee Member, Search Committee for Chief Diversity and Inclusion Officer, Medical College of Wisconsin
- 2017 - Present Committee Member, Biomedical Resource Center Advisory Committee, Medical College of Wisconsin
- 2017 - Present Vice Chair/Secretary, Executive Committee of the Curriculum and Evaluation Committee, Medical College of Wisconsin
- 2018 - Present Chair, Curriculum & Program Committee, Graduate School, Medical College of Wisconsin
- 2018 - Present Taskforce member, M1-M2 Grading Taskforce, Curriculum & Evaluation Committee, Medical College of Wisconsin
- 2019 - Present Committee Member, Committee on Self-Imposed Regulatory Burden, Office of Research, Medical College of Wisconsin
- 2019 Committee member, Search Committee for Chair, Department of Pathology, Medical College of Wisconsin

MEDICAL COLLEGE TEACHING ACTIVITIES:

Medical Student Education

- 2005 - 2006 Medical Physiology - Cardiovascular lab
- 2005 - 2011 Medical Physiology - Pulmonary Physiology lab
- 2012 - 2014 Mentor for Neehar Raj, Physician Scientist Pathway
- 08/15/2018 - 2019 M1 Physiology Course, Co-Director (shadowing Dr. Julian Lombard, Course Director)
- 11/2019 Sleep, Exercise, Temperature Regulation (M1)
- 12/2019 Temperature Regulation lecture (M1)

Resident and Fellow Education

- 2011 Pulmonary Fellow Research Elective - Introduction to Physiological Genomics and Sequencing Technologies
- 2012 Pulmonary Fellow Research Elective - Creating and use of genetically modified animals

Graduate Student Education

- 2011 - Present Physiological Genomics, Bioinformatics lectures and hands-on laboratories
- 2016 - Present Physiological Genomics - MMP student essay and oral presentations
- 2016 - Present Physiological Genomics - Comparative Genomics, Linkage Mapping, and Genome Sequence lectures
- 08/2019 FBS1 Respiratory System
- 08/2020 FBS1 Respiratory System

EXTRAMURAL TEACHING:

Community/Lay Public

- 11/2005 - 12/2005 University of Wisconsin- Milwaukee, Pulmonary Pathophysiology lectures for nursing students
- 11/2005 Pilgrim Park Middle School, Brookfield WI, PhUn day (Physiology Understanding)
- 11/2015 Brookfield East High School, Brookfield WI, Tour and hands-on lab in the Human & Molecular Genetics Center at the Medical College of Wisconsin
- 03/2017 Brookfield East High School, Brookfield WI, A Day in the Life of a Physiologist

MCW STUDENTS, FACULTY, RESIDENTS AND CLINICAL/RESEARCH FELLOWS MENTORED:

Undergraduate Students

- Nathan Miller, Medical College of Wisconsin, 06/2002 - 08/2002 Preceptor, Summer Program for Undergraduate Research, Oral presentation
- Eddie Sirlin, Medical College of Wisconsin, 06/2003 - 08/2003 Preceptor, Summer Program for Undergraduate Research, Oral presentation
- Michelle Beulow, Medical College of Wisconsin, 06/2004 - 08/2004 Preceptor, Summer Program for Undergraduate Research, Oral presentation
- Sophia Venero, Medical College of Wisconsin, 06/2014 - 08/2014 Preceptor, DSHREP summer research program, Oral presentation
- Asia Henderson, Medical College of Wisconsin, 06/2015 - 08/2015 Preceptor, DSHREP summer research program, Oral presentation
- Sara Imam, Medical College of Wisconsin, 06/2016 - 08/2016 Preceptor, DSHREP summer research program, Oral presentation
- Asha Woodfolk, Medical College of Wisconsin, 06/2017 - 08/2017 Preceptor, DSHREP summer research program, Oral presentation
- Miracle Powell, Medical College of Wisconsin, 06/2018 - 08/2018 Preceptor, DSHREP summer research program, Oral presentation

Medical Students

- Neehar Raj, Medical College of Wisconsin, 03/2012 - 06/2014 Pathway mentor, Poster presentation at Medical Student poster session

Graduate Students

MS Committees

- Genevieve E. Hogan, Medical College of Wisconsin, 07/2001 - 08/2003, Master of Science degree, Physiology graduate student

PhD Students Advised

- G. Mouradian, Jr., Medical College of Wisconsin, 08/2009 - 10/2009, Rotation project completion, Physiology graduate student
- Nan Cher Yeo, Medical College of Wisconsin, 08/2010 - 09/2010, Rotation project completion, Physiology graduate student

Students Advised

Madeline Jewell, Medical College of Wisconsin, 08/2017 - 12/2017, Rotation project completion,
Physiology graduate student

Committees

Maribel Marquez, Medical College of Wisconsin, 01/2018 - Present, Ongoing mentoring, Physiology
graduate student

Alicia Ivory, Medical College of Wisconsin, 02/2018 - Present, Ongoing, Physiology graduate student

PROGRAMMATIC DEVELOPMENTS:

Educational Programs

Faculty

2014 - 2015 Developed Masters in Medical Physiology Program, approved through Graduate School on
March 2, 2015

2015 - Present Director of Masters in Medical Physiology Program, MCW Graduate School

COMMUNITY SERVICE ACTIVITIES:

2011 Milwaukee Public Schools Science Fair - reviewer

2017 EgGS Initiative (Engaging Girls in Stem) workshop participant, Medical College of Wisconsin

2018 MCW Cancer Crush, "Bella is wagging her tail to crush cancer"

(<https://www.youtube.com/watch?v=otUPZSFSwU&feature=youtu.be>), July 2018

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. Ryan ML, Hedrick MS, Pizarro J, Bisgard GE. Effects of carotid body sympathetic denervation on ventilatory acclimatization to hypoxia in the goat. *Respir Physiol*. 1995 Feb;99(2):215-24.
2. Pizarro J, Ryan ML, Hedrick MS, Xue DH, Keith IM, Bisgard GE. Intracarotid substance P infusion inhibits ventilation in the goat. *Respir Physiol*. 1995 Jul;101(1):11-22.
3. Ryan ML, Hedrick MS, Pizarro J, Bisgard GE. Carotid body noradrenergic sensitivity in ventilatory acclimatization to hypoxia. *Respir Physiol*. 1993 Apr;92(1):77-90.
4. Forster HV, **Dwinell MR**, Hodges MR, Brozoski D, Hogan GE. Do genes on rat chromosomes 9, 13, 16, 18, and 20 contribute to regulation of breathing? *Respir Physiol Neurobiol*. 2003 May 30;135(2-3):247-61.
5. Kwitek AE, Jacob HJ, Baker JE, **Dwinell MR**, Forster HV, Greene AS, Kunert MP, Lombard JH, Mattson DL, Pritchard KA Jr, Roman RJ, Tonellato PJ, Cowley AW Jr. BN phenotype: detailed characterization of the cardiovascular, renal, and pulmonary systems of the sequenced rat. *Physiol Genomics*. 2006 Apr 13;25(2):303-13.
6. Hedrick MS, Ryan ML, Pizarro J, Bisgard GE. Modulation of respiratory rhythm by alpha 2-adrenoceptors in awake and anesthetized goats. *J Appl Physiol* (1985). 1994 Aug;77(2):742-50.
7. Hedrick MS, Ryan ML, Bisgard GE. Recurrent laryngeal nerve activation by alpha 2 adrenergic agonists in goats. *Respir Physiol*. 1995 Aug;101(2):129-37.
8. Hodges MR, Forster HV, Papanek PE, **Dwinell MR**, Hogan GE. Ventilatory phenotypes among four strains of adult rats. *J Appl Physiol* (1985). 2002 Sep;93(3):974-83.
9. **Dwinell MR**, Forster HV, Petersen J, Rider A, Kunert MP, Cowley AW Jr, Jacob HJ. Genetic determinants on rat chromosome 6 modulate variation in the hypercapnic ventilatory response using consomic strains. *J Appl Physiol* (1985). 2005 May;98(5):1630-8.
10. Kunert MP, Drenjancevic-Peric I, **Dwinell MR**, Lombard JH, Cowley AW Jr, Greene AS, Kwitek AE, Jacob HJ. Consomic strategies to localize genomic regions related to vascular reactivity in the Dahl salt-sensitive rat. *Physiol Genomics*. 2006 Aug 16;26(3):218-25.
11. Mattson DL, **Dwinell MR**, Greene AS, Kwitek AE, Roman RJ, Cowley AW Jr, Jacob HJ. Chromosomal mapping of the genetic basis of hypertension and renal disease in FHH rats. *Am J Physiol Renal*

- Physiol. 2007 Dec;293(6):F1905-14.
12. **Dwinell MR**. Physiological genomics: from bench to bedside. *Exp Physiol*. 2007 Nov;92(6):987.
 13. **Dwinell MR**, Kazemi H, Lam JT, Powell FL. Central amino acid neurotransmitters, ventilatory output and metabolism during acute hypoxia in anesthetized rats. *Adv Exp Med Biol*. 2001;499:291-6.
 14. Olson EB Jr, Bohne CJ, **Dwinell MR**, Podolsky A, Vidruk EH, Fuller DD, Powell FL, Mitchel GS. Ventilatory long-term facilitation in unanesthetized rats. *J Appl Physiol* (1985). 2001 Aug;91(2):709-16.
 15. Powell FL, **Dwinell MR**, Aaron EA. Measuring ventilatory acclimatization to hypoxia: comparative aspects. *Respir Physiol*. 2000 Sep;122(2-3):271-84.
 16. Powell FL, Huey KA, **Dwinell MR**. Central nervous system mechanisms of ventilatory acclimatization to hypoxia. *Respir Physiol*. 2000 Jul;121(2-3):223-36.
 17. **Dwinell MR**, Huey KA, Powell FL. Chronic hypoxia induces changes in the central nervous system processing of arterial chemoreceptor input. *Adv Exp Med Biol*. 2000;475:477-84.
 18. **Dwinell MR**, Powell FL. Chronic hypoxia enhances the phrenic nerve response to arterial chemoreceptor stimulation in anesthetized rats. *J Appl Physiol* (1985). 1999 Aug;87(2):817-23.
 19. Hedrick MS, **Dwinell MR**, Janssen PL, Pizarro J, Bisgard GE. Differential respiratory muscle recruitment induced by clonidine in awake goats. *J Appl Physiol* (1985). 1998 Apr;84(4):1198-207.
 20. Janssen PL, **Dwinell MR**, Pizarro J, Bisgard GE. Intracarotid dopamine infusion does not prevent acclimatization to hypoxia. *Respir Physiol*. 1998 Jan;111(1):33-43.
 21. Janssen PL, O'Halloran KD, Pizarro J, **Dwinell MR**, Bisgard GE. Carotid body dopaminergic mechanisms are functional after acclimatization to hypoxia in goats. *Respir Physiol*. 1998 Jan;111(1):25-32.
 22. **Dwinell MR**, Janssen PL, Bisgard GE. Lack of long-term facilitation of ventilation after exposure to hypoxia in goats. *Respir Physiol*. 1997 Apr;108(1):1-9.
 23. **Dwinell MR**, Janssen PL, Pizarro J, Bisgard GE. Effects of carotid body hypocapnia during ventilatory acclimatization to hypoxia. *J Appl Physiol* (1985). 1997 Jan;82(1):118-24.
 24. **Dwinell MR**, Janssen PL, Pizarro J, Bisgard GE. The role of carotid body CO₂ during ventilatory acclimatization to hypoxia in the goat. *Adv Exp Med Biol*. 1996;410:387-90.
 25. Janssen PL, **Dwinell MR**, Pizarro DJ, Bisgard GE. Effects of continuous intracarotid infusion of dopamine during long-term hypoxia in awake goats. *Adv Exp Med Biol*. 1996;410:383-6.
 26. Xue D, Keith IM, **Dwinell MR**, Bisgard GE. Mitochondrial division, blood vessel dilation, and large intercellular space expansion of goat carotid body during hypoxia. *Adv Exp Med Biol*. 1996;410:55-8.
 27. **Dwinell MR**, Worthey EA, Shimoyama M, Bakir-Gungor B, DePons J, Laulederkind S, Lowry T, Nigam R, Petri V, Smith J, Stoddard A, Twigger SN, Jacob HJ, RGD Team. The Rat Genome Database 2009: variation, ontologies and pathways. *Nucleic Acids Res*. 2009 Jan;37(Database issue):D744-9. PMID: PMC2686558
 28. Laulederkind SJ, Shimoyama M, Hayman GT, Lowry TF, Nigam R, Petri V, Smith JR, Wang SJ, de Pons J, Kowalski G, Liu W, Rood W, Munzenmaier DH, **Dwinell MR**, Twigger SN, Jacob HJ, RGD Team. The Rat Genome Database curation tool suite: a set of optimized software tools enabling efficient acquisition, organization, and presentation of biological data. *Database (Oxford)*. 2011;2011:bar002. PMID: PMC3041158
 29. Mattson DL, **Dwinell MR**, Greene AS, Kwitek AE, Roman RJ, Jacob HJ, Cowley AW Jr. Chromosome substitution reveals the genetic basis of Dahl salt-sensitive hypertension and renal disease. *Am J Physiol Renal Physiol*. 2008 Sep;295(3):F837-42. PMID: PMC2536867
 30. Gene Ontology Consortium. The Gene Ontology: enhancements for 2011. *Nucleic Acids Res*. 2012 Jan;40(Database issue):D559-64. PMID: PMC3245151
 31. Petri V, Shimoyama M, Hayman GT, Smith JR, Tutaj M, de Pons J, **Dwinell MR**, Munzenmaier DH, Twigger SN, Jacob HJ, RGD Team. The Rat Genome Database pathway portal. *Database (Oxford)*. 2011;2011:bar010. PMID: PMC3072770
 32. **Dwinell MR**. Online tools for understanding rat physiology. *Brief Bioinform*. 2010 Jul;11(4):431-9. PMID: PMC2905522
 33. Riley D, Dwinell M, Qian B, Krause KL, Bonis JM, Neumueller S, Marshall BD, Hodges MR, Forster HV. Differences between three inbred rat strains in number of K⁺ channel-immunoreactive neurons in the medullary raphe nucleus. *J Appl Physiol* (1985). 2010 Apr;108(4):1003-10. PMID: PMC2853200
 34. Shimoyama M, Hayman GT, Laulederkind SJ, Nigam R, Lowry TF, Petri V, Smith JR, Wang SJ, Munzenmaier DH, **Dwinell MR**, Twigger SN, Jacob HJ, RGD Team. The rat genome database curators: who, what, where, why. *PLoS Comput Biol*. 2009 Nov;5(11):e1000582. PMID:

35. Jacob HJ, Lazar J, **Dwinell MR**, Moreno C, Geurts AM. Gene targeting in the rat: advances and opportunities. *Trends Genet.* 2010 Dec;26(12):510-8. PMID: PMC2991520
36. **Dwinell MR**, Lazar J, Geurts AM. The emerging role for rat models in gene discovery. *Mamm Genome.* 2011 Aug;22(7-8):466-75. PMID: PMC3643810
37. **Dwinell MR**, Hogan GE, Sirlin E, Mayhew DL, Forster HV. Postnatal ventilatory response to CO₂ in awake piglets. *Respir Physiol Neurobiol.* 2011 Jan 31;175(1):49-54.
38. Kunert MP, **Dwinell MR**, Lombard JH. Vascular responses in aortic rings of a consomic rat panel derived from the Fawn Hooded Hypertensive strain. *Physiol Genomics.* 2010 Nov 29;42A(4):244-58. PMID: PMC3008365
39. Kunert MP, **Dwinell MR**, Drenjancevic Peric I, Lombard JH. Sex-specific differences in chromosome-dependent regulation of vascular reactivity in female consomic rat strains from a SSxBN cross. *Am J Physiol Regul Integr Comp Physiol.* 2008 Aug;295(2):R516-27. PMID: PMC2519925
40. Laulederkind SJ, Tutaj M, Shimoyama M, Hayman GT, Lowry TF, Nigam R, Petri V, Smith JR, Wang SJ, de Pons J, **Dwinell MR**, Jacob HJ. Ontology searching and browsing at the Rat Genome Database. *Database (Oxford).* 2012;2012:bas016. PMID: PMC3308169
41. Shimoyama M, Nigam R, McIntosh LS, Nagarajan R, Rice T, Rao DC, **Dwinell MR**. Three ontologies to define phenotype measurement data. *Front Genet.* 2012;3:87. PMID: PMC3361058
42. Basile DP, **Dwinell MR**, Wang SJ, Shames BD, Donohoe DL, Chen S, Sreedharan R, Van Why SK. Chromosome substitution modulates resistance to ischemia reperfusion injury in Brown Norway rats. *Kidney Int.* 2013 Feb;83(2):242-50. PMID: PMC3561482
43. Laulederkind SJF, Hayman GT, Wang SJ, Lowry TF, Nigam R, Petri V, Smith JR, **Dwinell MR**, Jacob HJ, Shimoyama M. Exploring genetic, genomic, and phenotypic data at the rat genome database. *Curr Protoc Bioinformatics.* 2012 Dec;Chapter 1:1.14.1-1.14.27. PMID: PMC3555435
44. Hayman GT, Jayaraman P, Petri V, Tutaj M, Liu W, De Pons J, **Dwinell MR**, Shimoyama M. The updated RGD Pathway Portal utilizes increased curation efficiency and provides expanded pathway information. *Hum Genomics.* 2013 Feb 05;7(1):4. PMID: PMC3598722
45. Gene Ontology Consortium, Blake JA, Dolan M, Drabkin H, Hill DP, Li N, Sitnikov D, Bridges S, Burgess S, Buza T, McCarthy F, Peddinti D, Pillai L, Carbon S, Dietze H, Ireland A, Lewis SE, Mungall CJ, Gaudet P, Chrisholm RL, Fey P, Kibbe WA, Basu S, Siegele DA, McIntosh BK, Renfro DP, Zweifel AE, Hu JC, Brown NH, Tweedie S, Alam-Faruque Y, Apweiler R, Auchinchloss A, Axelsen K, Bely B, Blatter M-, Bonilla C, Bouguerleret L, Boutet E, Breuza L, Bridge A, Chan WM, Chavali G, Coudert E, Dimmer E, Estreicher A, Famiglietti L, Feuermann M, Gos A, Gruaz-Gumowski N, Hieta R, Hinz C, Hulo C, Huntley R, James J, Jungo F, Keller G, Laiho K, Legge D, Lemercier P, Lieberherr D, Magrane M, Martin MJ, Masson P, Mutowo-Muellenet P, O'Donovan C, Pedruzzi I, Pichler K, Poggioli D, Porras Millán P, Poux S, Rivoire C, Roechert B, Sawford T, Schneider M, Stutz A, Sundaram S, Tognolli M, Xenarios I, Foulgar R, Lomax J, Roncaglia P, Khodiyar VK, Lovering RC, Talmud PJ, Chibucos M, Giglio MG, Chang H-, Hunter S, McAnulla C, Mitchell A, Sangrador A, Stephan R, Harris MA, Oliver SG, Rutherford K, Wood V, Bahler J, Lock A, Kersey PJ, McDowall DM, Staines DM, Dwinell M, Shimoyama M, Laulederkind S, Hayman T, Wang S-, Petri V, Lowry T, D'Eustachio P, Matthews L, Balakrishnan R, Binkley G, Cherry JM, Costanzo MC, Dwight SS, Engel SR, Fisk DG, Hitz BC, Hong EL, Karra K, Miyasato SR, Nash RS, Park J, Skrzypek MS, Weng S, Wong ED, Berardini TZ, Huala E, Mi H, Thomas PD, Chan J, Kishore R, Sternberg P, Van Auken K, Howe D, Westerfield M. Gene Ontology annotations and resources. *Nucleic Acids Res.* 2013 Jan;41(Database issue):D530-5. PMID: PMC3531070
46. Laulederkind SJ, Hayman GT, Wang SJ, Smith JR, Lowry TF, Nigam R, Petri V, de Pons J, **Dwinell MR**, Shimoyama M, Munzenmaier DH, Worthey EA, Jacob HJ. The Rat Genome Database 2013--data, tools and users. *Brief Bioinform.* 2013 Jul;14(4):520-6. PMID: PMC3713714
47. Allen KP, **Dwinell MR**, Zappa A, Temple A, Thulin J. Comparison of 2 rat breeding schemes using conventional caging. *J Am Assoc Lab Anim Sci.* 2013 Mar;52(2):142-5. PMID: PMC3624781
48. Laulederkind SJ, Liu W, Smith JR, Hayman GT, Wang SJ, Nigam R, Petri V, Lowry TF, de Pons J, **Dwinell MR**, Shimoyama M. PhenoMiner: quantitative phenotype curation at the rat genome database. *Database (Oxford).* 2013;2013:bat015. PMID: PMC3630803
49. Wang SJ, Laulederkind SJ, Hayman GT, Smith JR, Petri V, Lowry TF, Nigam R, **Dwinell MR**, Worthey EA, Munzenmaier DH, Shimoyama M, Jacob HJ. Analysis of disease-associated objects at the Rat Genome Database. *Database (Oxford).* 2013;2013:bat046. PMID: PMC3689439
50. Nigam R, Laulederkind SJ, Hayman GT, Smith JR, Wang SJ, Lowry TF, Petri V, De Pons J, Tutaj M, Liu

- W, Jayaraman P, Munzenmaier DH, Worthey EA, **Dwinell MR**, Shimoyama M, Jacob HJ. Rat Genome Database: a unique resource for rat, human, and mouse quantitative trait locus data. *Physiol Genomics*. 2013 Sep 16;45(18):809-16. PMID: PMC3783816
51. Flister MJ, Tsaih SW, O'Meara CC, Endres B, Hoffman MJ, Geurts AM, **Dwinell MR**, Lazar J, Jacob HJ, Moreno C. Identifying multiple causative genes at a single GWAS locus. *Genome Res*. 2013 Dec;23(12):1996-2002. PMID: PMC3847770
 52. Li Z, Ward BD, **Dwinell MR**, Lombard JH, Pawela CP. fMRI and fcMRI phenotypes map the genomic effect of chromosome 13 in Brown Norway and Dahl salt-sensitive rats. *Neuroimage*. 2014 Apr 15;90:403-12.
 53. Smith JR, Park CA, Nigam R, Laulederkind SJ, Hayman GT, Wang SJ, Lowry TF, Petri V, Pons JD, Tutaj M, Liu W, Worthey EA, Shimoyama M, **Dwinell MR**. The clinical measurement, measurement method and experimental condition ontologies: expansion, improvements and new applications. *J Biomed Semantics*. 2013 Oct 08;4(1):26. PMID: PMC3882879
 54. Nigam R, Munzenmaier DH, Worthey EA, **Dwinell MR**, Shimoyama M, Jacob HJ. Rat Strain Ontology: structured controlled vocabulary designed to facilitate access to strain data at RGD. *J Biomed Semantics*. 2013 Nov 22;4(1):36. PMID: PMC4177145
 55. Beyer AM, Raffai G, Weinberg BD, Fredrich K, Rodgers MS, Geurts AM, Jacob HJ, **Dwinell MR**, Lombard JH. Amelioration of salt-induced vascular dysfunction in mesenteric arteries of Dahl salt-sensitive rats by missense mutation of extracellular superoxide dismutase. *Am J Physiol Heart Circ Physiol*. 2014 Feb;306(3):H339-47. PMID: PMC3920146
 56. Petri V, Jayaraman P, Tutaj M, Hayman GT, Smith JR, De Pons J, Laulederkind SJ, Lowry TF, Nigam R, Wang SJ, Shimoyama M, **Dwinell MR**, Munzenmaier DH, Worthey EA, Jacob HJ. The pathway ontology - updates and applications. *J Biomed Semantics*. 2014 Feb 05;5(1):7. PMID: PMC3922094
 57. Petri V, Hayman GT, Tutaj M, Smith JR, Laulederkind SJ, Wang SJ, Nigam R, De Pons J, Shimoyama M, **Dwinell MR**, Worthey EA, Jacob HJ. Disease pathways at the Rat Genome Database Pathway Portal: genes in context-a network approach to understanding the molecular mechanisms of disease. *Hum Genomics*. 2014 Sep 30;8(1):17. PMID: PMC4191248
 58. Shimoyama M, De Pons J, Hayman GT, Laulederkind SJ, Liu W, Nigam R, Petri V, Smith JR, Tutaj M, Wang SJ, Worthey E, Dwinell M, Jacob H. The Rat Genome Database 2015: genomic, phenotypic and environmental variations and disease. *Nucleic Acids Res*. 2015 Jan;43(Database issue):D743-50. PMID: PMC4383884
 59. Li C, Li Z, Ward BD, **Dwinell MR**, Lombard JH, Hudetz AG, Pawela CP. Enhancement of resting-state fcMRI networks by prior sensory stimulation. *Brain Connect*. 2014 Nov;4(9):760-8. PMID: PMC4238242
 60. Liu W, Laulederkind SJ, Hayman GT, Wang SJ, Nigam R, Smith JR, De Pons J, **Dwinell MR**, Shimoyama M. OntoMate: a text-mining tool aiding curation at the Rat Genome Database. *Database (Oxford)*. 2015;2015. PMID: PMC4305386
 61. Wang SJ, Laulederkind SJ, Hayman GT, Petri V, Liu W, Smith JR, Nigam R, **Dwinell MR**, Shimoyama M. PhenoMiner: a quantitative phenotype database for the laboratory rat, *Rattus norvegicus*. Application in hypertension and renal disease. *Database (Oxford)*. 2015;2015. PMID: PMC4309021
 62. Gene Ontology Consortium. Gene Ontology Consortium: going forward. *Nucleic Acids Res*. 2015 Jan;43(Database issue):D1049-56. PMID: PMC4383973
 63. Flister MJ, Prokop JW, Lazar J, Shimoyama M, Dwinell M, Geurts A, International Committee on Standardized Genetic Nomenclature for Mice, Rat Genome and Nomenclature Committee. 2015 Guidelines for Establishing Genetically Modified Rat Models for Cardiovascular Research. *J Cardiovasc Transl Res*. 2015 Jun;8(4):269-77. PMID: PMC4475456
 64. Nayak S, Khan MA, Wan TC, Pei H, Linden J, **Dwinell MR**, Geurts AM, Imig JD, Auchampach JA. Characterization of Dahl salt-sensitive rats with genetic disruption of the A2B adenosine receptor gene: implications for A2B adenosine receptor signaling during hypertension. *Purinergic Signal*. 2015 Dec;11(4):519-31. PMID: PMC4648794
 65. Allen KP, **Dwinell MR**, Zappa AM, Michaels AM, Murray KM, Thulin JD. Rat Breeding Parameters According to Floor Space Available in Cage. *J Am Assoc Lab Anim Sci*. 2016 Jan;55(1):21-4. PMID: PMC4747006
 66. Prokop JW, Tsaih SW, Faber AB, Boehme S, Underwood AC, Troyer S, Playl L, Milsted A, Turner ME, Ely D, Martins AS, Tutaj M, Lazar J, **Dwinell MR**, Jacob HJ. The phenotypic impact of the male-specific region of chromosome-Y in inbred mating: the role of genetic variants and gene duplications in multiple inbred rat strains. *Biol Sex Differ*. 2016;7:10. PMID: PMC4740989

67. Rubattu S, Di Castro S, Schulz H, Geurts AM, Cotugno M, Bianchi F, Maatz H, Hummel O, Falak S, Stanzione R, Marchitti S, Scarpino S, Giusti B, Kura A, Gensini GF, Peyvandi F, Mannucci PM, Rasura M, Sciarretta S, **Dwinell MR**, Hubner N, Volpe M. Ndufc2 Gene Inhibition Is Associated With Mitochondrial Dysfunction and Increased Stroke Susceptibility in an Animal Model of Complex Human Disease. *J Am Heart Assoc*. 2016 Feb 17;5(2). PMID: PMC4802485
68. Hayman GT, Lauderkind SJ, Smith JR, Wang SJ, Petri V, Nigam R, Tutaj M, De Pons J, **Dwinell MR**, Shimoyama M. The Disease Portals, disease-gene annotation and the RGD disease ontology at the Rat Genome Database. *Database (Oxford)*. 2016;2016. PMID: PMC4805243
69. Wang SJ, Lauderkind SJ, Hayman GT, Petri V, Smith JR, Tutaj M, Nigam R, **Dwinell MR**, Shimoyama M. Comprehensive coverage of cardiovascular disease data in the disease portals at the Rat Genome Database. *Physiol Genomics*. 2016 Aug 01;48(8):589-600. PMID: PMC5005459
70. Maric-Bilkan C, Arnold AP, Taylor DA, Dwinell M, Howlett SE, Wenger N, Reckelhoff JF, Sandberg K, Churchill G, Levin E, Lundberg MS. Report of the National Heart, Lung, and Blood Institute Working Group on Sex Differences Research in Cardiovascular Disease: Scientific Questions and Challenges. *Hypertension*. 2016 May;67(5):802-7. PMID: PMC4833564
71. Petri V, Hayman GT, Tutaj M, Smith JR, Lauderkind S, Wang SJ, Nigam R, De Pons J, Shimoyama M, **Dwinell MR**. Disease, Models, Variants and Altered Pathways-Journeying RGD Through the Magnifying Glass. *Comput Struct Biotechnol J*. 2016;14:35-48. PMID: PMC4700298
72. Shimoyama M, Lauderkind SJ, De Pons J, Nigam R, Smith JR, Tutaj M, Petri V, Hayman GT, Wang SJ, Ghiasvand O, Thota J, **Dwinell MR**. Exploring human disease using the Rat Genome Database. *Dis Model Mech*. 2016 Oct 01;9(10):1089-1095. PMID: PMC5087824
73. Densmore JC, Schaid TR, Jeziorczak PM, Medhora M, Audi S, Nayak S, Auchampach J, **Dwinell MR**, Geurts AM, Jacobs ER. Lung injury pathways: Adenosine receptor 2B signaling limits development of ischemic bronchiolitis obliterans organizing pneumonia. *Exp Lung Res*. 2017 Feb;43(1):38-48. PMID: PMC5831175
74. Flister MJ, Tsaih SW, Stoddard A, Plasterer C, Jagtap J, Parchur AK, Sharma G, Prisco AR, Lemke A, Murphy D, Al-Gizawiy M, Straza M, Ran S, Geurts AM, **Dwinell MR**, Greene AS, Bergom C, LaViolette PS, Joshi A. Host genetic modifiers of nonproductive angiogenesis inhibit breast cancer. *Breast Cancer Res Treat*. 2017 Aug;165(1):53-64. PMID: PMC6404538
75. Hirabayashi M, Hara H, Goto T, Takizawa A, **Dwinell MR**, Yamanaka T, Hochi S, Nakauchi H. Haploid embryonic stem cell lines derived from androgenetic and parthenogenetic rat blastocysts. *J Reprod Dev*. 2017 Dec 15;63(6):611-616. PMID: PMC5735273
76. Shimoyama M, Smith JR, Bryda E, Kuramoto T, Saba L, Dwinell M. Rat Genome and Model Resources. *ILAR J*. 2017 Jul 01;58(1):42-58. PMID: PMC6057551
77. Lauderkind SJF, Hayman GT, Wang SJ, Smith JR, Petri V, Hoffman MJ, De Pons J, Tutaj MA, Ghiasvand O, Tutaj M, Thota J, **Dwinell MR**, Shimoyama M. A Primer for the Rat Genome Database (RGD). *Methods Mol Biol*. 2018;1757:163-209. PMID: PMC6487669
78. Siebers EM, Choi MJ, Tinklenberg JA, Beatka MJ, Ayres S, Meng H, Helbling DC, Takizawa A, Bennett B, Garces AM, Dias Duarte Machado LG, Dimmock D, **Dwinell MR**, Geurts AM, Lawlor MW. Sdh+/- Rats Display Minimal Muscle Pathology Without Significant Behavioral or Biochemical Abnormalities. *J Neuropathol Exp Neurol*. 2018 Aug 01;77(8):665-672. PMID: PMC6044411
79. The Gene Ontology Consortium. The Gene Ontology Resource: 20 years and still GOing strong. *Nucleic Acids Res*. 2019 Jan 08;47(D1):D330-D338. PMID: PMC6323945
80. Zhao Y, Smith JR, Wang SJ, **Dwinell MR**, Shimoyama M. Quantitative phenotype analysis to identify, validate and compare rat disease models. *Database (Oxford)*. 2019 Jan 01;2019. PMID: PMC6444380
81. Wang SJ, Lauderkind SJF, Zhao Y, Hayman GT, Smith JR, Tutaj M, Thota J, Tutaj MA, Hoffman MJ, Bolton ER, De Pons J, **Dwinell MR**, Shimoyama M. Integrated curation and data mining for disease and phenotype models at the Rat Genome Database. *Database (Oxford)*. 2019 Jan 01;2019. PMID: PMC6369425
82. Pizarro J, Warner MM, Ryan M, Mitchell GS, Bisgard GE. Intracarotid norepinephrine infusions inhibit ventilation in goats. *Respir Physiol*. 1992 Dec;90(3):299-310.
83. Davis SE, Solhied G, Castillo M, Dwinell M, Brozoski D, Forster HV. Postnatal developmental changes in CO2 sensitivity in rats. *J Appl Physiol* (1985). 2006 Oct;101(4):1097-103.
84. Bisgard GE, Pizarro J, Ryan M, Hedrick M. Substance P inhibits ventilation in the goat. *Adv Exp Med Biol*. 1994;360:277-9.
85. Plasterer C, Tsaih SW, Lemke A, Schilling R, Dwinell M, Rau A, Auer P, Rui H, Flister MJ. Identification

- of a Rat Mammary Tumor Risk Locus That Is Syntenic with the Commonly Amplified 8q12.1 and 8q22.1 Regions in Human Breast Cancer Patients. *G3 (Bethesda)*. 2019 May 07;9(5):1739-1743. PMID: PMC6505137
86. Smith JR, Bolton ER, **Dwinell MR**. The Rat: A Model Used in Biomedical Research. *Methods Mol Biol*. 2019;2018:1-41.
 87. Laulederkind SJF, Hayman GT, Wang SJ, Hoffman MJ, Smith JR, Bolton ER, De Pons J, Tutaj MA, Tutaj M, Thota J, **Dwinell MR**, Shimoyama M. Rat Genome Databases, Repositories, and Tools. *Methods Mol Biol*. 2019;2018:71-96.
 88. Meurer JR, Whittle JC, Lamb KM, Kosasih MA, **Dwinell MR**, Urrutia RA. Precision Medicine and Precision Public Health: Academic Education and Community Engagement. *Am J Prev Med*. 2019 Aug;57(2):286-289.
 89. The Gene Ontology Consortium. Expansion of the Gene Ontology knowledgebase and resources. *Nucleic Acids Res*. 2017 Jan 04;45(D1):D331-D338. PMID: PMC5210579
 90. Shimoyama M, Smith JR, Hayman T, Laulederkind S, Lowry T, Nigam R, Petri V, Wang SJ, Dwinell M, Jacob H, RGD Team. RGD: a comparative genomics platform. *Hum Genomics*. 2011 Jan;5(2):124-9. PMID: PMC3222152
 91. **Dwinell MR**, Powell FL. Central dopamine D2 receptors in the CNS are not involved in ventilatory acclimatization to hypoxia in anesthetized rats *FASEB Journal*. 20 March 1998;12(5).
 92. Huey KA, Szewczak J, **Dwinell MR**, Juarez RA, Low MJ, Powell FL. The role of D2-dopamine receptors in ventilatory acclimatization to chronic hypoxia in mice *FASEB Journal*. 20 March 1998;12(5).
 93. **Dwinell MR**, Janssen PL, Pizarro J, Bisgard GE. Increased carotid body CO₂ sensitivity after ventilatory acclimatization to hypoxia in goats *FASEB Journal*. 1996;10(3).
 94. Smith JR, Hayman GT, Wang SJ, Laulederkind SJF, Hoffman MJ, Kaldunski ML, Tutaj M, Thota J, Nalabolu HS, Ellanki SLR, Tutaj MA, De Pons JL, Kwitek AE, **Dwinell MR**, Shimoyama ME. The Year of the Rat: The Rat Genome Database at 20: a multi-species knowledgebase and analysis platform. *Nucleic Acids Res*. 2020 Jan 08;48(D1):D731-D742. PMID: PMC7145519
 95. Miller EA, Kastner DB, Grzybowski MN, **Dwinell MR**, Geurts AM, Frank LM. Robust and replicable measurement for prepulse inhibition of the acoustic startle response. *Mol Psychiatry*. 2021 Jun;26(6):1909-1927. PMID: PMC7483293
 96. Cowley AW Jr, **Dwinell MR**. Chromosomal Substitution Strategies to Localize Genomic Regions Related to Complex Traits. *Compr Physiol*. 2020 Mar 12;10(2):365-388.
 97. Prokop JW, Chhetri SB, van Veen JE, Chen X, Underwood AC, Uhl K, **Dwinell MR**, Geurts AM, Correa SM, Arnold AP. Transcriptional analysis of the multiple Sry genes and developmental program at the onset of testis differentiation in the rat. *Biol Sex Differ*. 2020 May 12;11(1):28. PMID: PMC7216353
 98. Mehrotra P, Ullah MM, Collett JA, Myers SL, **Dwinell MR**, Geurts AM, Basile DP. Mutation of ROR γ T reveals a role for Th17 cells in both injury and recovery from renal ischemia-reperfusion injury. *Am J Physiol Renal Physiol*. 2020 Nov 01;319(5):F796-F808. PMID: PMC7789982
 99. **Dwinell MR**, Geurts AM. Integrating biology with rat genomic tools *The Laboratory Rat*. 1 January 2019:811-825.
 100. Fehrenbach DJ, Abais-Battad JM, Dasinger JH, Lund H, Keppel T, Zemaj J, Cherian-Shaw M, Gundry RL, Geurts AM, **Dwinell MR**, Mattson DL. Sexual Dimorphic Role of CD14 (Cluster of Differentiation 14) in Salt-Sensitive Hypertension and Renal Injury. *Hypertension*. 2021 Jan;77(1):228-240. PMID: PMC9732708
 101. Saha K, Sontheimer EJ, Brooks PJ, **Dwinell MR**, Gersbach CA, Liu DR, Murray SA, Tsai SQ, Wilson RC, Anderson DG, Asokan A, Banfield JF, Bankiewicz KS, Bao G, Bulte JWM, Bursac N, Campbell JM, Carlson DF, Chaikof EL, Chen ZY, Cheng RH, Clark KJ, Curiel DT, Dahlman JE, Deverman BE, Dickinson ME, Doudna JA, Ekker SC, Emborg ME, Feng G, Freedman BS, Gamm DM, Gao G, Ghiran IC, Glazer PM, Gong S, Heaney JD, Hennebold JD, Hinson JT, Khvorova A, Kiani S, Lagor WR, Lam KS, Leong KW, Levine JE, Lewis JA, Lutz CM, Ly DH, Maragh S, McCray PB Jr, McDevitt TC, Mirochnitchenko O, Morizane R, Murthy N, Prather RS, Ronald JA, Roy S, Roy S, Sabbisetti V, Saltzman WM, Santangelo PJ, Segal DJ, Shimoyama M, Skala MC, Tarantal AF, Tilton JC, Truskey GA, Vandsburger M, Watts JK, Wells KD, Wolfe SA, Xu Q, Xue W, Yi G, Zhou J, SCGE Consortium. The NIH Somatic Cell Genome Editing program. *Nature*. 2021 Apr;592(7853):195-204. PMID: PMC8026397
 102. Howe K, Dwinell M, Shimoyama M, Corton C, Betteridge E, Dove A, Quail MA, Smith M, Saba L, Williams RW, Chen H, Kwitek AE, McCarthy SA, Uliano-Silva M, Chow W, Tracey A, Torrance J, Sims Y, Challis R, Threlfall J, Blaxter M). The genome sequence of the Norway rat, *Rattus norvegicus*

- Berkenhout 1769 Wellcome Open Res. 2021, 6:118.
103. Howe K, Dwinell M, Shimoyama M, Corton C, Betteridge E, Dove A, Quail MA, Smith M, Saba L, Williams RW, Chen H, Kwitek AE, McCarthy SA, Uliano-Silva M, Chow W, Tracey A, Torrance J, Sims Y, Challis R, Threlfall J, Blaxter M. The genome sequence of the Norway rat, *Rattus norvegicus* Berkenhout 1769 Wellcome Open Research. 2021;6.
 104. Kaldunski ML, Smith JR, Hayman GT, Brodie K, De Pons JL, Demos WM, Gibson AC, Hill ML, Hoffman MJ, Lamers L, Laulederkind SJF, Nalabolu HS, Thorat K, Thota J, Tutaj M, Tutaj MA, Vedi M, Wang SJ, Zacher S, **Dwinell MR**, Kwitek AE. The Rat Genome Database (RGD) facilitates genomic and phenotypic data integration across multiple species for biomedical research. *Mamm Genome*. 2022 Mar;33(1):66-80. PMID: PMC8570235
 105. Vedi M, Nalabolu HS, Lin CW, Hoffman MJ, Smith JR, Brodie K, De Pons JL, Demos WM, Gibson AC, Hayman GT, Hill ML, Kaldunski ML, Lamers L, Laulederkind SJF, Thorat K, Thota J, Tutaj M, Tutaj MA, Wang SJ, Zacher S, **Dwinell MR**, Kwitek AE. MOET: a web-based gene set enrichment tool at the Rat Genome Database for multiontology and multispecies analyses. *Genetics*. 2022 Apr 04;220(4). PMID: PMC8982048
 106. Hoffman MJ, Takizawa A, Jensen ES, Schilling R, Grzybowski M, Geurts AM, **Dwinell MR**. *Btg2* mutation induces renal injury and impairs blood pressure control in female rats. *Physiol Genomics*. 2022 Jul 01;54(7):231-241. PMID: PMC9208437
 107. Dwinell M, Takizawa A, Lazcares L, Tutaj M, Schilling R, Geurts A, Kwitek A. Hybrid Rat Diversity Program (HRDP): A rat resource for mapping complex traits. *FASEB J*. 2022 May;36 Suppl 1.
 108. Clark KC, Wagner VA, Holl KL, Reho JJ, Tutaj M, Smith JR, **Dwinell MR**, Grobe JL, Kwitek AE. Body Composition and Metabolic Changes in a Lyon Hypertensive Congenic Rat and Identification of *Ercc6l2* as a Positional Candidate Gene. *Front Genet*. 2022;13:903971. PMID: PMC9263446
 109. Dissanayake LV, Zietara A, Levchenko V, Spires DR, Burgos Angulo M, El-Meanawy A, Geurts AM, **Dwinell MR**, Palygin O, Staruschenko A. Lack of xanthine dehydrogenase leads to a remarkable renal decline in a novel hypouricemic rat model. *iScience*. 2022 Sep 16;25(9):104887. PMID: PMC9418856
 110. Wang SJ, Brodie KC, De Pons JL, Demos WM, Gibson AC, Hayman GT, Hill ML, Kaldunski ML, Lamers L, Laulederkind SJF, Nalabolu HS, Thota J, Thorat K, Tutaj MA, Tutaj M, Vedi M, Zacher S, Smith JR, **Dwinell MR**, Kwitek AE. Ontological Analysis of Coronavirus Associated Human Genes at the COVID-19 Disease Portal. *Genes (Basel)*. 2022 Dec 07;13(12). PMID: PMC9777590
 111. Vedi M, Smith JR, Thomas Hayman G, Tutaj M, Brodie KC, De Pons JL, Demos WM, Gibson AC, Kaldunski ML, Lamers L, Laulederkind SJF, Thota J, Thorat K, Tutaj MA, Wang SJ, Zacher S, **Dwinell MR**, Kwitek AE. 2022 updates to the Rat Genome Database: a Findable, Accessible, Interoperable, and Reusable (FAIR) resource. *Genetics*. 2023 May 04;224(1). PMID: PMC10474928
 112. Gene Ontology Consortium, Aleksander SA, Balhoff J, Carbon S, Cherry JM, Drabkin HJ, Ebert D, Feuermann M, Gaudet P, Harris NL, Hill DP, Lee R, Mi H, Moxon S, Mungall CJ, Muruganugan A, Mushayahama T, Sternberg PW, Thomas PD, Van Auken K, Ramsey J, Siegele DA, Chisholm RL, Fey P, Aspromonte MC, Nugnes MV, Quaglia F, Tosatto S, Giglio M, Nadendla S, Antonazzo G, Attrill H, Dos Santos G, Marygold S, Strelets V, Tabone CJ, Thurmond J, Zhou P, Ahmed SH, Asanithong P, Luna Buitrago D, Erdol MN, Gage MC, Ali Kadhum M, Li KYC, Long M, Michalak A, Pesala A, Pritazhara A, Saverimuttu SCC, Su R, Thurlow KE, Lovering RC, Logie C, Oliferenko S, Blake J, Christie K, Corbani L, Dolan ME, Drabkin HJ, Hill DP, Ni L, Sitnikov D, Smith C, Cuzick A, Seager J, Cooper L, Elser J, Jaiswal P, Gupta P, Jaiswal P, Naithani S, Lera-Ramirez M, Rutherford K, Wood V, De Pons JL, **Dwinell MR**, Hayman GT, Kaldunski ML, Kwitek AE, Laulederkind SJF, Tutaj MA, Vedi M, Wang SJ, D'Eustachio P, Aimò L, Axelsen K, Bridge A, Hyka-Nouspikel N, Morgat A, Aleksander SA, Cherry JM, Engel SR, Karra K, Miyasato SR, Nash RS, Skrzypek MS, Weng S, Wong ED, Bakker E, Berardini TZ, Reiser L, Auchincloss A, Axelsen K, Argoud-Puy G, Blatter MC, Boutet E, Breuza L, Bridge A, Casals-Casas C, Coudert E, Estreicher A, Livia Famiglietti M, Feuermann M, Gos A, Gruaz-Gumowski N, Hulo C, Hyka-Nouspikel N, Jungo F, Le Mercier P, Lieberherr D, Masson P, Morgat A, Pedruzzi I, Pourcel L, Poux S, Rivoire C, Sundaram S, Bateman A, Bowler-Barnett E, Bye-A-Jee H, Denny P, Ignatchenko A, Ishtiaq R, Lock A, Lussi Y, Magrane M, Martin MJ, Orchard S, Raposo P, Speretta E, Tyagi N, Warner K, Zaru R, Diehl AD, Lee R, Chan J, Diamantakis S, Raciti D, Zarowiecki M, Fisher M, James-Zorn C, Ponferrada V, Zorn A, Ramachandran S, Ruzicka L, Westerfield M. The Gene Ontology knowledgebase in 2023. *Genetics*. 2023 May 04;224(1). PMID: PMC10158837
 113. Arnold AP, Chen X, Grzybowski MN, Ryan JM, Sengelaub DR, Mohanroy T, Furlan VA, Grisham W,

- Malloy L, Takizawa A, Wiese CB, Vergnes L, Skaletsky H, Page DC, Reue K, Harley VR, **Dwinell MR**, Geurts AM. A "Four Core Genotypes" rat model to distinguish mechanisms underlying sex-biased phenotypes and diseases. *bioRxiv*. 2023 Feb 10. PMCID: PMC9934672
114. Kaldunski ML, Smith JR, Brodie KC, De Pons JL, Demos WM, Gibson AC, Hayman GT, Lamers L, Laulederkind SJF, Thorat K, Thota J, Tutaj MA, Tutaj M, Vedi M, Wang SJ, Zacher S, **Dwinell MR**, Kwitek AE. Rare disease research resources at the Rat Genome Database. *Genetics*. 2023 Aug 09;224(4). PMCID: PMC10411567
 115. Gabriel DBK, Liley AE, Franks HT, Minnes GL, Tutaj M, **Dwinell MR**, de Jong TV, Williams RW, Mulligan MK, Chen H, Simon NW. Divergent risky decision-making and impulsivity behaviors in Lewis rat substrains with low genetic difference. *Behav Neurosci*. 2023 Aug;137(4):254-267. PMCID: PMC10524952
 116. Wagner VA, Holl KL, Clark KC, Reho JJ, **Dwinell MR**, Lehmler HJ, Raff H, Grobe JL, Kwitek AE. Genetic background in the rat affects endocrine and metabolic outcomes of bisphenol F exposure. *Toxicol Sci*. 2023 Jun 28;194(1):84-100. PMCID: PMC10306406
 117. Wagner VA, Holl KL, Clark KC, Reho JJ, Lehmler HJ, Wang K, Grobe JL, **Dwinell MR**, Raff H, Kwitek AE. The Power of the Heterogeneous Stock Rat Founder Strains in Modeling Metabolic Disease. *Endocrinology*. 2023 Nov 02;164(12). PMCID: PMC10637104
 118. Laulederkind SJF, Hayman GT, Wang SJ, Kaldunski ML, Vedi M, Demos WM, Tutaj M, Smith JR, Lamers L, Gibson AC, Thorat K, Thota J, Tutaj MA, de Pons JL, **Dwinell MR**, Kwitek AE. The Rat Genome Database: Genetic, Genomic, and Phenotypic Data Across Multiple Species. *Curr Protoc*. 2023 Jun;3(6):e804. PMCID: PMC10335880
 119. de Jong TV, Pan Y, Rastas P, Munro D, Tutaj M, Akil H, Benner C, Chen D, Chitre AS, Chow W, Colonna V, Dalgard CL, Demos WM, Doris PA, Garrison E, Geurts AM, Gunturkun HM, Guryev V, Hourlier T, Howe K, Huang J, Kalbfleisch T, Kim P, Li L, Mahaffey S, Martin FJ, Mohammadi P, Ozel AB, Polesskaya O, Pravenec M, Prins P, Sebat J, Smith JR, Solberg Woods LC, Tabakoff B, Tracey A, Uliano-Silva M, Villani F, Wang H, Sharp BM, Telese F, Jiang Z, Saba L, Wang X, Murphy TD, Palmer AA, Kwitek AE, **Dwinell MR**, Williams RW, Li JZ, Chen H. A revamped rat reference genome improves the discovery of genetic diversity in laboratory rats. *bioRxiv*. 2023 Sep 28. PMCID: PMC10197727
 120. de Jong TV, Pan Y, Rastas P, Munro D, Tutaj M, Akil H, Benner C, Chen D, Chitre AS, Chow W, Colonna V, Dalgard CL, Demos WM, Doris PA, Garrison E, Geurts AM, Gunturkun HM, Guryev V, Hourlier T, Howe K, Huang J, Kalbfleisch T, Kim P, Li L, Mahaffey S, Martin FJ, Mohammadi P, Ozel AB, Polesskaya O, Pravenec M, Prins P, Sebat J, Smith JR, Solberg Woods LC, Tabakoff B, Tracey A, Uliano-Silva M, Villani F, Wang H, Sharp BM, Telese F, Jiang Z, Saba L, Wang X, Murphy TD, Palmer AA, Kwitek AE, **Dwinell MR**, Williams RW, Li JZ, Chen H. A revamped rat reference genome improves the discovery of genetic diversity in laboratory rats. *Cell Genom*. 2024 Apr 10;4(4):100527. PMCID: PMC11019364