Peter Cliff Reifsnyder
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EDUCATION

Bowdoin College, Brunswick, ME

Received A.B. degree in Biochemistry/History, May 1989.

WORK EXPERIENCE

The Jackson Laboratory, Bar Harbor, ME
April 2024- Present

Project Manager – Interventions Testing Program (ITP), Laboratory of Ron Korstanje, Ph.D.: Research in Aging in Mouse Models

- Managed staff of the Korstanje lab involved in the ITP in their daily duties.
- Managed the ordering of diets for the ITP consortium.
- Prepared reports for monthly ITP conference calls.
- Managed all interactions involving the ITP with JAX Animal Care and Use Committee.
- Managed yearly cohorts of mice for maximum lifespan studies.
- Managed pilot studies for new diets.

The Jackson Laboratory, Bar Harbor, ME
October 2018- April 2024

Lab Manager, Research Assistant IV, Laboratory of David Harrison, Ph.D.: Research in Aging in Mouse Models

- Managed staff of the Harrison lab in their daily duties.
- Managed the ordering of diets for the Interventions Testing Program (ITP) consortium.
- Prepared reports for monthly ITP conference calls.
- Managed all interactions with JAX Animal Care and Use Committee.
- Managed yearly cohorts of mice for maximum lifespan studies.
- Managed pilot studies for new diets.

- Managed the development of new congenic and targeted mutation mouse strains requiring combination with specific Cre transgenics. Performed, collected, and

analyzed genotyping data to select matings. Performed experiments using tamoxifen to induce Cre expression to then induce conditional knockout of target genes. Analyzed biological markers to determine success of induced knockout protocol. Conducted lifespan experiments using this model.

- Developed new project to understand the effect of aging therapies in type 2 diabetes models. Created research plan and executed all aspects of the project: monitoring mice for body weight, plasma glucose, and plasma insulin levels, sacrificing mice for histology and tissue analysis, statistical and graphical analysis, and writing and submitting manuscripts for publication.

The Jackson Laboratory, Bar Harbor, ME
September 2011- October 2018

Research Assistant IV, Laboratory of David Harrison, Ph.D.: Research in Aging in Mouse Models

- Managed progress of diet restriction project. Monitored weekly feeding regimen, organized sacrifices with multiple tissues collected, collected sera for analysis, performed glucose tolerance tests, maintained databases of ongoing collected data, performed statistical analysis of results, and generated graphic representations of data.

- Managed the development of new congenic and targeted mutation mouse strains requiring combination with specific Cre transgenics. Performed, collected, and analyzed genotyping data to select matings. Performed experiments using tamoxifen to induce Cre expression to then induce conditional knockout of target genes. Analyzed biological markers to determine success of induced knockout protocol.

- Developed new project to understand the effect of aging therapies in type 2 diabetes models. Created research plan and executed all aspects of the project: monitoring mice for body weight, plasma glucose, and plasma insulin levels, sacrificing mice for histology and tissue analysis, statistical and graphical analysis, and writing and submitting manuscripts for publication.

The Jackson Laboratory, Bar Harbor, ME
February 2007 – September 2011

Research Assistant II, Type 1 Diabetes Repository: Developing Mouse Models for the Study of the Complications of Diabetes

- Managed progress of 20 projects under the direction of a contract with The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) in conjunction with the Animal Models of Diabetic Complications Consortium (AMDCC).

- Managed the development of ~60 congenic, transgenic, and targeted mutation mouse strains. Many contained mutations that needed to be backcrossed onto multiple strain backgrounds and combined with a diabetes-inducing mutation such as Leptin receptor

deficiency or Ins2^{Akita}. Other strains required combination with specific Cre transgenics to go with conditional targeted mutations. Collected and analyzed genotyping data to select appropriate matings.

- Developed SNP-marker panels to differentiate various strains involved in speed congenic projects.
- Worked with many different scientific service groups who were directed to carry out aspects of the projects, these included Genotyping, Molecular Biology, Cell Biology, Necropsy, Histology, Lab Animal Health, and Heart/Lung/Blood.
- Collected, stored, analyzed, and uploaded to project website data from 20 separate 6 to 12-month phenotyping projects. The data was generated by different people, including myself, such that I had to retrieve the data from multiple sources and organize it in Excel files.
- Coordinated the shipment of tissues from the phenotyping projects to external collaborators.

  Designed PowerPoint presentations of, and presented data from, projects at monthly conference calls with AMDCC members and NIDDK staff.

The Jackson Laboratory, Bar Harbor, ME
November 1992 - February 2007

Senior Research Assistant, Laboratory of Edward Leiter, Ph.D.: Research in Type 1 and Type 2 Diabetes

- Worked with approximately 100 strains in the Leiter lab colony
- Developed numerous congenic, transgenic, and recombinant congenic mouse strains, genotyped and selected matings for these strains, including many where multiple loci were being selected.
- Collected data from numerous Type 1 Diabetes incidence studies; used survival analysis programs to determine significance of differential disease onset of strains.
- Used Flow Cytometry to characterize the immune system profile of numerous type 1 diabetes-related strains.
- Conducted bone marrow transfer studies with Type 1 Diabetes susceptible and resistant strains.
- In collaboration with Gary Churchill, Ph.D., generated, phenotyped, genotyped, and analyzed an (NZOxNON)xNON backcross; first author on paper describing this data.
- Developed a protocol for milking mice; in collaboration with Steve Watkins, Ph.D., of Lipomics, showed that milk of NZO dams is deficient in phosphotidylcholines.

Have since taught the milking protocol to several people within The Jackson Laboratory as well as provided a written protocol to interested external researchers.

- Made 10 recombinant congenic strains based on NZOxNON crosses, selecting for multiple markers and monitoring and selecting for phenotypes. One of these strains, NONcNZO10, is now distributed by JAX Mice & Services and included amongst their list of most popular strains. Presented data on these mice at two conventions (one talk and one poster) as well as at in-house interest groups; first author on resultant paper.

- Expanded upon initial genotyping of the NOR strain; genotyped and analyzed (NODxNOR)F2 cross; generated, phenotyped, and genotyped the (NODxNOR.NOD-IL1)F2 cross (analysis was done by Dr. Churchill's group). First author on paper describing this data.

- Developed a speed congenic protocol for Type 1 Diabetes related transgenics and congenics.

- Elucidated heredity and helped characterize the spontaneous mutation *Lepr-db5* in the NOD strain.

- Genotyped an (NZOxNON)F2 cross generated by Liselotte Herberg, Ph.D., of the University of Düsseldorf; data was analyzed by grouping phenotypes and generating contingency Chi squares.

- Tested efficacy of thiolizinedione compounds on several obesity/diabesity prone strains, measuring body weight, plasma glucose, plasma insulin, plasma leptin, DEXA, and fat pad weights; collected tissues for RNA and lipid analysis.

The Jackson Laboratory, Bar Harbor, ME
September 1990 - October 1992

Research Assistant, Laboratory of Benjamin Taylor, Ph.D.: Research in Mapping Genes Using Recombinant Inbred Strains.

- Mapped several genes using Dr. Taylor's murine virus strains and recombinant inbred strains by Southern blots and PCR.

- Colony management of recombinant inbred strains.

The Jackson Laboratory, Bar Harbor, ME
July 1989 - August 1990

Research Assistant, Laboratory of Leslie Kozak, Ph.D.: Research in Cloning and Sequencing a Putative Gene for Brown Fat Development.

- Cloned, sub-cloned, and sequenced gene fragments.

Bowdoin College, Brunswick, ME
September 1988 - May 1989

Independent Study: Lab Technician under supervision of Professor John Howland, Ph.D.

- Conducted experiments in pyrophosphate uptake in *Bacillus megaterium* in comparison with another student's work on *Sulfolobus archaebacterium.*

Bowdoin College, Brunswick, ME
June - August 1988

Merck Foundation Summer Fellowship under supervision of Professor John Howland, Ph.D.

- Conducted experiments in phosphate and pyrophosphate uptake in *Bacillus megaterium*; this research expanded into the above independent study.
- Handled bacterial cultures and measured uptake of radioactive phosphorous characterization of inbred strains, congenics, and crosses.

Fox Chase Cancer Center, Institute for Cancer Research, Philadelphia, PA
June - August 1987, June - August 1986

Lab Technician in the laboratory of Martin Weigert, Ph.D.

- After working with Dr. Weigert for a high school chemistry project on DNA, was invited to work in his lab during the next two summers.
- Learned and performed techniques such as DNA extraction (working with Sally Camper, Ph.D., then a postdoc in Dr. Weigert's lab) and Southern blots.
- Evaluated the usefulness of a clinical technique, isoelectric focusing, for use in Dr. Weigert's immunological mouse models.

RELEVANT SKILLS

Colony management (weaning, genotyping, selection, mating, record keeping); DNA and RNA extraction; Southern and Northern blots; protein extraction and Western blots; genotyping by PCR and Real-Time PCR; cDNA cloning and library construction; flow cytometry; splenocyte and bone marrow transfer; cell culture; ELISA; blood, urine, milk, and tissue collection; Dual X-ray Absorptiometry.

Proficient in use of: MGI, MIT, SNP, and Ensembl databases for characterization of inbred strains, congenics, and crosses; statistical analysis programs for ANOVA, regression and survival analysis; PowerPoint slide design for presentations; uploading and downloading data to/from shared internal and external databases; project records maintenance.

PERSONAL INFORMATION

Married; four children

Ice hockey player

Jazz disc jockey at Bowdoin College, WBOR

Alpha Delta Phi fraternity; served as Rush and Social Chairperson

Attended Germantown Friends School (K-12), Philadelphia, PA

REFERENCES

Dr. Edward Leiter, ed.leiter@jax.org, former supervisor

Racheal Wallace, (207) 288-6664, former supervisor

Dr. David E. Harrison, (919) 428-0450, former supervisor

Dr. Ron Korstanje, (207) 288-6992, supervisor

Peter C. Reifsnyder: Publications (46 total, 11 as first author):

Miller, Richard A., et al. (2024). Lifespan effects in male UM_HET3 mice treated with sodium thiosulfate, 16-hydroxyestriol, and late-start canagliflozin. GeroScience. Published online: 16 May 2024. https://doi.org/10.1007/s11357-024-01176-2

Willows, Jake W., et al. (2024). Contributions of mouse genetic strain background to age-related

phenotypes in physically active HET3 mice. Neurobiology of Aging, Vol 136, April 2024. https://doi.org/10.1016/j.neurobiolaging.2024.01.010

Harrison, David E., et al. (2023). Astaxanthin and meclizine extend lifespan in UM-HET3 male mice; fisetin, SG1002 (hydrogen sulfide donor), dimethyl fumarate, mycophenolic acid, and 4-phenylbutyrate do not significantly affect lifespan in either sex at the doses and schedules used. GeroScience. Published online: 02 December 2023. https://doi.org/10.1007/s11357-023-01011-0

Willows, Jake W., et al. (2023). Age-related changes to adipose tissue and peripheral neuropathy in genetically diverse HET3 mice differ by sex and are not mitigated by rapamycin longevity treatment. *Aging Cell*, https://doi.org/10.1111/acel.13784

Strong, Randy et al. (2022). Lifespan benefits for the combination of rapamycin plus acarbose and for captoprill in genetically heterogeneous mice. *Aging Cell*, https://doi.org/10.1111/acel.13724

Reifsnyder, P. C., Flurkey, K., Doty, R., Calcutt, N. A., Koza, R. A., & Harrison, D. E. (2022). Rapamycin/metformin co-treatment normalizes insulin sensitivity and reduces complications of metabolic syndrome in type 2 diabetic mice. *Aging Cell*, 00, e13666. https://doi.org/10.1111/acel.13666

Harrison DE, Strong R, Reifsnyder P, Kumar N, Fernandez E, Flurkey K, Javors MA, Lopez-Cruzan M, Macchiarini F, Nelson JF, Bitto A, Sindler AL, Cortopassi G, Kavanagh K, Leng L, Bucala R, Rosenthal NA, Salmon AB,Stearns TM, Bogue M, Miller RA (2021) 17-a-estradiol late in life extends lifespan in aging UM-HET3 male mice; nicotinamide riboside and three other drugs do not affect lifespan in either sex. Aging Cell, 2021;20:e13328

Miller RA, Harrison DE, Allison DB, Bogue M, Debarba L, Diaz V, Fernandez E, Galecki A, Garvey WT, Jayarathne H, Kumar N, Javors MA, Ladiges WC, Macchiarini F, Nelson JF, Reifsnyder PC, Rosenthal NA, Sadagurski M, Salmon AB, , Smith DL, Snyder JM, Lombard DB, Strong R (2020) Canagliflozin extends life span in genetically heterogeneous male but not female mice. JCI Insight, 2020;5(21):e140019

Harrison DE, Strong R, Reifsnyder P, Kumar N, Fernandez E, Flurkey K, Javors MA, Lopez-Cruzan M, Macchiarini F, Nelson JF, Bitto A, Sindler AL, Cortopassi G, Kavanagh K, Leng L. Bucala R, Rosenthal N, Salmon A, Stearns TM, Bogue M, Miller RA. 2021 17-a-estradiol late in life extends lifespan in aging UM-HET3 male mice; nicotinamide riboside and three other drugs do not affect lifespan in either sex. Aging Cell. https://doi.org/10.1111/acel.13328 [PMID: 33788371; PMCID: PMC8135004]

Strong R, Miller RA, Bogue M, Fernandez E, Javors MA, Libert S, Marinez PA, Murphy MP, Musi N, Nelson JF, Petrascheck M, Reifsnyder PC, Richardson A, Salmon AB, Macchiarini F, Harrison DE (2020) Rapamycin-mediated mouse lifespan extension: Late-life dosage regimes

with sex-specific effects. Aging Cell, DOI: 10.1111/acel.13269

Reifsnyder PC, Te A, Harrison DE (2019) Differential Effects of Rapamycin on Glucose Metabolism in Nine Inbred Strains. J Gerontol A Biol Sci Med Sci, 2019, Vol.XX, No. XX 1-8 doi:10.1093/Gerona/glz157

Reifsnyder PC, Ryzhov S, Flurkey K, Anunciado-Koza RP, Mills I, Harrison DE, Koza RA (2018) Cardioprotective effects of dietary rapamycin on adult female C57BLKS/J-*Lepr*^{db} mice. Ann. N. Y. Acad. Sci. doi: 10.1111/nyas.13557

Reifsnyder PC, Flurkey K, Te A, Harrison DE (2016) Rapamycin treatment benefits glucose metabolism in mouse models of type 2 diabetes. AGING, Vol. 8, No. 11, 3120-3130.

Reifsnyder PC, Doty R, Harrison DE (2014) Rapamycin Ameliorates Nephropathy Despite Elevating Hyperglycemia in a Polygenic Mouse Model of Type 2 Diabetes, NONcNZO10/LtJ. PLoS ONE 9(12): e114324. doi:10.1371/ journal.pone.0114324

Leiter EH, Strobel M, O'Neill A, Schultz D, Schile A, Reifsnyder PC. Comparison of Two New Mouse Models of Polygenic Type 2 Diabetes at the Jackson Laboratory, NONcNZO10Lt/J and TALLYHO/JngJ. J Diabetes Research. 2013; 2013:165327. Epub 2013 Apr 8.

Chen YG, Scheuplein F, Driver JP, Hewes AA, Reifsnyder PC, Leiter EH, Serreze DV. Testing the Role of P2X7 Receptors in the Development of Type 1 Diabetes In Nonobese Diabetic Mice. J Immunology, 2011 Apr 1:186(7):4278-84. Epub 2011 Feb 25.

Nicholson A, Reifsnyder PC, Malcolm RD, Lucas CA, MacGregor GR, Zhang W, Leiter EH. Diet-induced obesity in two C57BL/6 substrains with intact or mutant nicotiamide nucleotide transhydrogenase (Nnt) gene. Obesity. 2010 Oct:18(10): 1902-5. Epub 2010 Jan 7.

Leiter EH, Reifsnyder PC, Wallace R, Li R, King B, Churchill GC. NOD x 129.H2(g7) backcross delineates 129S1/SvImJ-derived genomic regions modulating type 1 diabetes development in mice. Diabetes. 2009 Jul:58(7):1700-3. Epub 2009 Mar 31.

Reifsnyder P, Schott W, Pomerleau D, Lessard MD, Soper BW, Leiter EH. Bone Marrow expressing a diabetes resistance MHC class II allele: diabetes deviation by chronic immune stimulation. Novartis Found Symp. 2008;292:32-46; discussion 46-9, 122-9, 202-3.

Leiter EH, Reifsnyder P, Driver J, Kamdar S, Choisy-Rossi C, Serreze DV, Hara M, Chervonsky A. Unexpected functional consequences of xenogenic transgene expression in beta-cells of NOD mice. Diabetes Obesity Metabolism 2007; Nov;9 Suppl 2:14-22.

Leiter EH, Reifsnyder PC, Xiao Q, Mistry J. Adipokine and insulin profiles distinguish diabetogenic and non-diabetogenic obesities in mice. Obesity 2007 Aug;15(8):1961-8.

Jing Chen, Yi-Guang Chen, Peter C. Reifsnyder, William H. Schott, Chul-Ho Lee, Felix Scheuplein, Friedrich Haag, Friedrich Koch-Nolte, David V. Serreze and Edward H. Leiter Targeted disruption of CD38 accelerates autoimmune diabetes in NOD/Lt mice by enhancing autoimmunity in an ART2-dependent fashion. J Immunology. 2006 Apr 15;176(8):4590-9

Leiter EH, Reifsnyder PC, Zhang W, Pan H-j, Xiao Q, Mistry J. Differential endocrine responses to rosiglitazone therapy in new mouse models of type 2 diabetes. Endocrinology 2006; 147(2):919-926.

Lee CH, Chen Y-G, Chen J, Reifsnyder PC, Serreze DV, Clare-Salzler M, Rodriguez M, Wasserfall C, Atkinson MA, Leiter EH. Novel leptin receptor mutation in NOD/LtJ mice suppresses type 1 diabetes progression: II. Immunologic analysis. Diabetes 2006 Jan; 55:171-178.

Chen J, Reifsnyder PC, Scheuplein F, Schott WH, Mileikovsky M, Soodeen-Karamath S, Nagy A, Dosch MH, Ellis J, Koch-Nolte F, Leiter EH. 'Agouti NOD': identification of a CBA-derived Idd locus on Chromosome 7 and its use for chimera production with NOD embryonic stem cells. Mamm Genome. 2005 Oct;16(10):775-83. Epub 2005 Oct 29.

Leiter EH, Reifsnyder PC, Zhang W, Pan HJ, Xiao Q, Mistry J. Differential Endocrine Responses to Rosiglitazone Therapy in New Mouse Models of Type 2 Diabetes. Endocrinology. 2005 Oct 27;

Lee CH, Reifsnyder PC, Naggert JK, Wasserfall C, Atkinson MA, Chen J, Leiter EH. Novel leptin receptor mutation in NOD/LtJ mice suppresses type 1 diabetes progression: I. Pathophysiological analysis. Diabetes. 2005 Sep;54(9):2525-32.

Pan HJ, Reifsnyder P, Vance DE, Xiao Q, Leiter EH. Pharmacogenetic analysis of rosiglitazone-induced hepatosteatosis in new mouse models of type 2 diabetes. Diabetes. 2005 Jun;54(6):1854-62.

PC Reifsnyder, R Li, PA Silveira, G Churchill, DV Serreze and EH Leiter. Conditioning the genome identifies additional diabetes resistance loci in Type 1 diabetes resistant NOR/Lt mice. Genes and Immunity. 2005, (6), 528-538.

Koza RA, Flurkey K, Graunke DM, Braun C, Pan HJ, Reifsnyder PC, Kozak LP, Leiter EH. 2004. Contributions of dysregulated energy metabolism to type 2 diabetes development in NZO/HlLt mice with polygenic obesity. Metabolism 53: 799-808.

Leiter EH, Reifsnyder PC. 2004. Differential levels of diabetogenic stress in two new mouse models of obesity and type 2 diabetes. Diabetes 53 Suppl 1: S4-S11.

McInerney MF, Najjar SM, Brickley D, Lutzke M, Abou-Rjaily GA, Reifsnyder P, Haskell BD, Flurkey K, Zhang YJ, Pietropaolo SL, Pietropaolo M, Byers JP, Leiter EH. 2004. Anti-insulin receptor autoantibodies are not required for type 2 diabetes pathogenesis in NZL/Lt mice, a New Zealand obese (NZO)-derived mouse strain. Exp Diabesity Res 5: 177-185.

Schott WH, Haskell BD, Tse HM, Milton MJ, Piganelli JD, Choisy-Rossi CM, Reifsnyder PC, Chervonsky AV, Leiter EH. 2004. Caspase-1 is not required for type 1 diabetes in the NOD mosue. Diabetes 53: 99-104.

Reifsnyder PC, Leiter EH. 2002. Deconstructing and reconstructing obesity-induced diabetes ('diabesity') in mice. Diabetes 51:825-832.

Watkins SM, Reifsnyder PR, Pan HJ, German B, Leiter EH. 2002. Lipid metabolome-wide effects of the PPARgamma agonist rosiglitazone. J. Lipid Res 43:1809-1817.

Reifsnyder PC, Leiter EH. 2000. Genetic and environmental links to obesity and diabetes. J Roy Soc Prom Health 120: 209-210.

Reifsnyder P, Churchill G, Leiter EH. 2000. Maternal environment and genotype interact to establish diabesity in mice. Genome Res 10:1568-1578.

Reifsnyder PC, Flynn JC, Gavin AL, Simone EA, Sharp J, Herberg L, Leiter EH. 1999. Genotypic and phenotypic characterization of six new recombinant congenic strains derived from NOD/Shi and CBA/J genomes. Mamm Genome 10:161-167.

Leiter EH, Reifsnyder PC, Flurkey K, Partke HJ, Junger E, Herberg L. 1998. NIDDM genes in mice: Deleterious synergism by both parental genomes contributes to diabetogenic thresholds. Diabetes 47:1287-1295.

Serreze DV, Chapman HD, Varnum DS, Hanson MS, Reifsnyder PC, Richard SD, Fleming SA, Leiter EH, Shultz LD. 1996. B-lymphocytes are essential for the initiation of T cell mediated autoimmune diabetes: Analysis of a new 'speed congenic' stock of NOD.Igμnull mice. J Exp Med 184:2049-2053.

Tsumura H, Reifsnyder PC, Leiter EH. 1996. Mapping of a murine AIDS virus-related proviral gene (Mrv6) in NOD/Lt mice to chromosome 14. Mamm Genome 7:706-707.

McAleer MA, Reifsnyder P, Palmer SM, Prochazka M, Love JM, Copeman JB, Powell EE, Rodrigues NR, Prins JB, Serreze DV, DeLarto NH, Wicker LS, Peterson LB, Todd JA, Leiter EH. 1995. Crosses of NOD mice with the related NON strain: A polygenic model for IDDM. Diabetes 44:1186-1195.

Serreze DV, Prochazka M, Reifsnyder PC, Bridgett MM, Leiter EH. 1994. Use of recombinant congenic and congenic strains of NOD mice to identify a new insulin-dependent diabetes resistance gene. J Exp Med 180:1553-1558.

Taylor BA, Reifsnyder PC. 1993. Typing recombinant inbred mouse strains for microsatellite markers. Mamm Genome 4: 239-242.

Taylor BA, Reifsnyder PC, DiLauro R. 1992. Linkage of the thyroid peroxidase locus (Tpo) to markers in the proximal part of Chromosome 12 of the mouse. Cytogenet Cell Genet 60: 250-251.

Villiotte PJ, Reifsnyder PC, Bloomstone JA, Howland JL. 1991. Uptake of inorganic pyrophosphate by Bacillus megaterium. FEMS Microbiol Lett 78: 293-296.