

CURRICULUM VITAE

Daniel C. Berry, PhD

Assistant professor
Cornell University
Division of Nutritional Sciences
526 Campus Rd
307 Biotechnology Building
Cornell University
Ithaca, NY 14853-6301
Phone (607).255.8857
Email: dcb37@cornell.edu
Website: <https://danielberrylab.com/>

POSITIONS

Assistant Professor (July 1, 2017-present)
Cornell University, Division of Nutritional Sciences

- Investigating white and beige adipose stem cells, their niche and their contribution to adipose tissue development, homeostasis, expansion and thermogenesis

EDUCATION AND RESEARCH TRAINING

Postdoctoral Fellow

UT Southwestern Medical Center, Department of Developmental Biology and Division of Endocrinology Department of Internal Medicine

Mentor: Dr. Jonathan Graff (June 2012 – July 2017)

- Investigating the roles and origins of adipose stem cells and their contribution to adipose tissue development and homeostasis

Case Western Reserve University, Department of Pharmacology and Department of Nutrition

Mentor: Dr. Noa Noy (August 2011 – June 2012)

- Probing the roles of vitamin A and retinoic acid on the transcriptional regulation of obesity and diabetes

Doctorate of Philosophy

Case Western Reserve University, Department of Nutrition

Advisor: Dr. Noa Noy (August 2008 – August 2011)

- Thesis title: "Retinoic Acid in Adipocyte Biology"
- Exploring the roles of vitamin A and retinoic acid on the transcriptional regulation of obesity and diabetes

Bachelor of Science

State University of New York (SUNY) at Cortland

2001 – 2005

- Major: Biology
- Concentration: Environmental Science

RESEARCH EXPERIENCE

Research Assistant

Case Western Reserve University, Department of Pharmacology

PI: Dr. Noa Noy (2007 – 2008)

- Exploring the roles of vitamin A and retinoic acid on the transcriptional regulation of obesity and diabetes

Research Assistant

Cornell University, Division of Nutritional Sciences

PI: Dr. Noa Noy (2005 – 2007)

- Examining the roles of retinoic acid on the transcriptional regulation of cancer

Research Assistant

State University of New York (SUNY) at Cortland

PI: Dr. Christopher Cirimo (2004 – 2006)

- Wetland vegetation, hydrology and habitat research of the Adirondack Mountains

Research Assistant (Intern)

Tunison laboratory of Aquatic Science. USGS

PI: Dr. H. George Ketola (2004)

- Physiological, nutritional and environmental impacts on fish reproduction

RESEARCH ARTICLES

1. Jiang, Y., Berry, D.C.,⁺ and Graff, J.M. Cellular and molecular differences between cold and $\beta 3$ Adrenergic receptor induced beiging. *eLife*. DOI: 10.7554/eLife.30329 **+Co-corresponding author.**
2. Jiang, Y.,* Berry, D.C.,*⁺ Tang, W., Arpke, R.W., Kyba, M., and Graff, J.M. A PPAR γ transcriptional cascade directs adipose progenitor-niche interaction and niche expansion. *Nature Commun.* 2017 Jun 26;8:15926. doi: 10.1038/ncomms15926. ***Contributed equally. +Co-corresponding author.**
3. Berry, D.C.,⁺ Jiang, Y., Arpke, R.W., Close, E.L., Uchida, A., Reading, D., Berglund, ED., Kyba, M., and Graff, J.M. Cellular aging contributes to failure of cold-induced beige adipocyte formation in old mice and humans. *Cell Metab.* 2017 Jan 10;25(1):166-181. **+Co-corresponding author.**
 - Research highlight and interview: Geach, T., “Reversing age-related decline in beiging.”, *Nat Rev Endocrinol.* 13 64 (2017). doi:10.1038/nrendo.2016.208
 - Cell Metabolism Preview: Fernandez-Marcos, PJ., and Serrano, M. “Young and Lean: Elimination of senescent cells boosts adaptive thermogenesis.”, *Cell Metab.* 2017 Feb 7; 25(2):226-228.

4. Berry, D.C., Jiang, Y., and Graff, J.M. Mouse strains to study cold-inducible beige progenitors and beige adipocyte formation and function. *Nat Commun.* 2016 Jan 5; 7:10184. doi: 10.1038/ncomms10184.
5. Jiang, Y.,* Berry, D.C.,* Tang, W., and Graff, J.M. Independent stem cell lineages regulate adipose organogenesis and adipose homeostasis. *Cell Rep.* 2014 Nov 6; 9(3):1007-22. *Contributed equally.
 - Recommended by the Faculty of 1000
6. Vreeland, A. C., Levi, L., Zhang, W., Berry, D.C., and Noy, N. Cellular retinoic acid-binding protein 2 inhibits tumor growth by two distinct mechanisms. *J Biol Chem.* 2014 Dec 5; 289(49): 34065-73.
7. Berry, D.C., Levi, L., and Noy, N. "Holo-retinol-binding protein and its receptor STRA6 drive oncogenic transformation". *Cancer Res* 2014 Nov 1; 74(21):6341-51.
8. Marwarha, G., Berry, D.C., Croniger, C.M., Noy, N. "The retinol esterifying enzyme LRAT supports cell signaling by retinol binding protein and its receptor STRA6". *FASEB J* 2014 Jan 28; 28(1): 26-34.
9. Berry, D.C., Jacobs, H, Marwarha, G. Gely-Pernot, A., O'Byrne, S.M., DeSantis, D., Klopfenstein, M., Feret, B., Dennefeld, C., Blaner, W.S, Croniger, C.M., Mark, M., Noy, N., Ghyselinck, N.B. "The Stra6 receptor is essential for retinol-binding protein induced insulin resistance but not for maintain vitamin A homeostasis in tissues other than the eye". *J Biol Chem.* 2013 July 9;(288): 24528-24539
10. Berry, D.C., Croniger CM, Ghyselinck NB, Noy N. "Transthyretin blocks retinol uptake and cell signaling by the holo-retinol binding protein receptor STRA6". *Mol Cell Biol.* 2012 Oct; 32(19): 3851-9
11. Berry, D.C., O'Byrne SM, Vreeland AC, Blaner WS, Noy N. "Cross talk between signaling and vitamin A transport by the retinol binding protein receptor STRA6". *Mol Cell Biol.* 2012 Aug; 32(15): 3164-75.
12. Berry, D. C., Desantis, D., Soltanian, H., Croniger, C.M., and Noy, N. "Retinoic acid upregulates pre-adipocyte genes to block adipogenesis and suppress diet-induced obesity". *Diabetes.* 2012 May; 61(5): 1112-21
13. Berry, D. C., Jin, H., Majumdar, A., and Noy, N. "Signaling by vitamin A and retinol-binding protein regulates gene expression to inhibit insulin responses." *Proc Natl Acad Sci USA.* 2011 Mar 15; 108(11): 4340-4345. (Cited 101 times)
 - Editors' Choice in Science Signaling: John F. Foley; Sci. Signal. 4 (165), ec83. [DOI: 10.1126/scisignal.4165ec83]
14. Berry, D. C., Soltanian, H., and Noy, N. "Repression of cellular retinoic acid-binding protein II during adipocyte differentiation." *J Biol Chem.* 2010 May 14; 285(20): 15324-15332.

15. Berry, D. C., and Noy, N. "All-trans-retinoic acid represses obesity and insulin resistance by activating both peroxisome proliferation-activated receptor beta/delta and retinoic acid receptor." *Mol Cell Biol*. 2009 Jun; 29(12): 3286-3296. (Cited 182 times)
 - Showcased Review: Wolf, G. "Retinoic acid activation of peroxisome proliferation-activated receptor delta represses obesity and insulin resistance." *Nutr Rev*. 2010 68(1): 67-70.
16. Schug, T. T.,* Berry, D.C.,* Toshkov, I.A., Cheng, L., Nikitin, A.Y., and Noy N. (2008). "Overcoming retinoic acid-resistance of mammary carcinomas by diverting retinoic acid from PPARbeta/delta to RAR." *Proc Natl Acad Sci USA*. 2008 May 27; 105(21): 7546-7551. *Contributed equally.
17. Schug, T. T., Berry, D.C., Shaw, N.S., Travis, S.N., and Noy, N. "Opposing effects of retinoic acid on cell growth result from alternate activation of two different nuclear receptors." *Cell*. 2007 May 18; 129(4): 723-733. (Cited 437 times)
 - Preview in Cell: Michalik, L and Wahli, W. (2007). "Guiding ligands to nuclear receptors." *Cell* 129(4): 649-651.
 - Recommended by the Faculty of 1000

REVIEWS

1. Berry, D.C., Jiang, Y and Graff, J.M. "Emerging roles of adipose progenitor cells in tissue development, homeostasis, expansion and thermogenesis." *Trends Endocrinol Metab*. 2016, Aug; 27(8): 574-585.
2. Berry, D.C., Stenesen, D., Zeve, D., Graff, J.M. "The developmental origins of adipose tissue" *Development*. 2013 Oct; 140(19):3939-49
3. Berry, D. C., and N. Noy. "Signaling by vitamin A and retinol-binding protein in regulation of insulin responses and lipid homeostasis." *Biochim Biophys Acta*. 1821(1):2012:168-176.
4. Berry, D. C., and Noy, N. "Is PPARbeta/delta a Retinoid Receptor?" *PPAR Res*. 2007: 73256.

BOOK CHAPTERS

Berry, D.C., and Noy, N. "Vitamin A and retinol-binding protein 4 in insulin responses and cancer" *Adipocytokines, Energy Balance and Cancer*. Chapter 5 Volume 12. Springer. Nov, 2016. DOI: 10.1007/978-3-319-41677-9_5

NCBI link to research articles:

[Berry DC NCBI publication list](#)

HONORS AND ACTIVITIES

2014-2016 Postdoctoral Certificate in Obesity and Metabolism Research
2014-2016 UT Southwestern Medical Center Postdoctoral Association Treasurer
2012-2014 Postdoctoral Certificate in Research
2012 Doctoral Excellence Award, Case Western Reserve University, Cleveland OH
2005 Presidents List of Academic Achievement: SUNY Cortland
2003-2005 Deans List of Academic Achievement: SUNY Cortland

2018- Division of Nutritional Sciences Seminar Committee Member
2018- Graduate Field of Nutrition Nomination Committee Member

FUNDING

Current

American Federation for Aging Research (AFAR)

Pending \$50,000/year

Title: Age-dependent decline of beige adipocyte induction and its metabolic consequences

Project period: July 1, 2018- June 30, 2020

Goals: The major goal of this project is to identify and define genes that regulate beige adipocyte formation in aging.

NIDDK – K01 Mentored Research Scientist Development Award

K01-DK109027 (\$395,260 total)

Title: Regulators of the adipose tissue niche control adiposity and metabolism

Project Period: 04/01/2016 to 03/31/2020

Goals: The major goal of this project is to identify and define genes that regulate adipose stem cell niche interaction, adipose niche formation and adipose niche expansion.

Completed

Postdoctoral funding:

Ruth L. Kirschstein Individual Postdoctoral Fellowship-F32-NIH-NIDDK

F32-DK101153 (\$55,094 direct)

Title: Cell cycle regulators control adiposity and metabolism

Project Period: 09/01/2014 to 08/31/2015

Goals: The major goal of this project was to define how cell cycle regulatory genes, specifically Ink4a/Arf, control adipose stem cell proliferation and the effect on adiposity and systemic metabolism.

NHLBI- Institutional Training Grant –T32

T32-HL007360-34 and 5T32HL007360-35 (\$90,000 total)

Title: Adipose tissue development and homeostasis

Project Period: 09/01/2012 to 08/31/2014

Goals: The major goal of this project was to identify adipose stem cells required for adipose tissue development and adipose tissue homeostasis

CONFERENCE PRESENTATIONS

Cellular aging contributes to failure of cold-induced beige adipocyte formation

1st International Conference on Precision Nutrition and Metabolism in Public Health and Medicine

Chania, Crete, Greece; Sept 2018 • Invited Talk

The involvement of Pdgfrb in the white and beige adipose lineage

Keystone symposia: Bioenergetics and metabolic disease

Keystone, Colorado; Jan 2018 • Poster

A PPAR γ transcriptional cascade directs adipose progenitor-niche interaction and niche expansion

Keystone Symposia: Obesity and Adipose Tissue Biology

Keystone, Colorado; Jan 2017 • Poster

Rejuvenating dormant beige adipose progenitors activates metabolism

Keystone Symposia: Beige and Brown Fat: Basic Biology and Novel Therapeutics.

Snowbird, Utah; Apr 2015 • Poster

Retinoic acid transcriptionally regulates inhibitors of adipogenesis to prevent obesity

Keystone Symposia: Genetic and Molecular Basis of Obesity and Body Weight Regulation

Santa Fe, NM; Jan 2012 • Poster

Cross-talk between STRA6 mediated vitamin A uptake and signaling

Case Western Reserve University, Department of Pharmacology Retreat

Cleveland, OH; Nov 2011 • Poster

Vitamin A signaling in oncogenic transformation

Case Comprehensive Cancer Center Retreat

Cleveland, OH; Jul 2011 • Poster

Mechanism by which retinoic acid inhibits adipogenesis

Case Western Reserve University, Department of Pharmacology Retreat

Cleveland, OH; Nov 2010 • Honorable Mention • Poster

Vitamin A signaling in oncogenic transformation

Case Comprehensive Cancer Center Retreat

Cleveland, OH; Jul 2010 • Poster

Signaling by vitamin A and retinol binding protein in regulation of insulin responses and lipid homeostasis

FASEB Retinoids Conference

Carefree, AZ; Jun 2010 • Oral Presentation

Repression of cellular retinoic acid-binding protein II during adipocyte differentiation

FASEB Retinoids Conference
Carefree, AZ; Jun 2010 • Poster

Mechanism by which retinoic acid inhibits adipogenesis

Case Western Reserve University, Department of Pharmacology Retreat
Cleveland, OH, Nov 2009 • Honorable Mention • Poster

All-trans-retinoic acid represses obesity and insulin resistance by activating both PPAR β/δ and RAR

Jensen Symposium University of Cincinnati
Cincinnati, OH; Oct 2009 • Poster

All-trans-retinoic acid represses obesity and insulin resistance by activating both peroxisome proliferator-activated receptor beta/delta and retinoic acid receptor

3rd International Congress on Prediabetes and the Metabolic Syndrome
Nice, France; Apr 2009 • Poster

All-trans-retinoic acid represses obesity and insulin resistance by activating both peroxisome proliferator-activated receptor beta/delta and retinoic acid receptor

Case Western Reserve University, Department of Pharmacology Retreat
Cleveland, OH; Nov 2008 • Oral Presentation

All-trans-retinoic acid represses obesity and insulin resistance by activating both peroxisome proliferator-activated receptor beta/delta and retinoic acid receptor

FASEB Retinoids Conference
New Haven, CT; Jun 2008. • Poster