**Contact information:**

Julie R. Hens

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**Qualification Summary:**

* My most recent research involves examining the function of nuclear PTHLH using CRISPR technology and mass spectrometry. Additionally, I am continuing my research on methionine restriction (MR) in cancer, and focusing on the changes affecting mitochondrial SLC transporters and mitochondrial metabolism.
* Previous research was determining how dietary methionine restriction (MR) can affect epigenetic mechanisms (miRNAs) that can ameliorate cancer (breast cancer and NSCLC) and could be used as an adjunct therapy to treat these cancers. In addition, I was collaborating with another scientist on how MR can improve liver metabolism in a fatty liver and aging mouse models.
* Experience mentoring students in research and teaching undergraduate courses in multiple areas of biology.
* Experience in developing biology courses laboratories for both face-2-face and online formats.
* Expertise in systems biology, oncology, epigenetics, development, metabolism.
* Extensive experience in literature searches, writing manuscripts, grants, powerpoints, and presenting research at national conferences.
* Broad experience in cell, molecular, and histological techniques, the use of in vivo preclinical models, such as transgenic and patient-derived xenograft (PDX) mouse models.
* Experience in quantitative statistical analysis of both large data sets from microarray and NGS, in addition to analysis of single experiments using PRISM, SAS, and Excel.
* Eleven years of laboratory management experience as an independent principal investigator.

**Education**

Canisius College Biology BA 1991

The Pennsylvania State University Genetics MS 1994

University of Maryland College Park Animal Science PhD 2001

Yale University, School of Medicine Developmental PostDoc 2007

 Biology/Mammary Physiology

**Professional Experience (Most recent)**

**Yale University, Department of Internal Medicine, Endocrine section (2017-present)**

***Research Associate Scientist***

* Examining the role of nuclear PTHLP using CRISPR technology and mass spectrometry. Examining the role of GABAb R1 and GABAb R2 interacting with CaSR in breast cancer to stimulate the apoptotic pathway.
* Examining the role of MR on mitochondrial metabolism
* Designing, performing and analyzing research data
* Presenting research at both local and national scientific meetings
* Writing research proposals and research publications

**The Orentreich Foundation for the Advancement of Science (OFAS) (2013-2016)**

***Senior Scientist***

* Developed a research program studying cancer cell metabolism and methionine restriction with a focus on miRNAs and triple negative breast cancer and non small cell lung cancer.
* Manage and maintained an independent research laboratory with a PhD-level research associate and one research technician
* Managed and maintain three mouse rooms for studies involving double transgenic mice, and patient-derived xenograft mice from Jackson laboratories
* Manage a $100,000-$200,000 yearly budget
* Update the cell culture and histology facility to include a new Nikon fluorescent microscope, dissecting microscope, and microtome
* Presented research at both local and national scientific meetings
* Wrote research proposals and research publications

**St. Bonaventure University, Biology department (2007-2013)**

*Assistant Professor in Biology (2007-2013)*

* Developed and taught a variety of science courses: Genetics (Bio291), Developmental Biology and Laboratory (Bio362), Molecular and Cell Biology (Bio466), Evolution (Bio390), Junior Seminar (Bio399), Inquiry into the Natural World (Clar102), Inquiry into the Natural World Laboratory (Clarl102), Biochemistry Laboratory (Biol371), Biology of Aging (Bio208)
* Developed a research program studying oncogenesis and development in the lung and mammary gland with a focus on epithelial-stromal cell interactions
* Managed 20 undergraduate students in research
* Maintained and managed an independent research laboratory
* Manage budget for laboratory
* Presented research at both local and national scientific meetings
* Wrote grants and research publications involving research that pertained to the role of cadherin-11, CTGF, Wnts and miRNAs in early mammary gland development and breast cancer.

**Yale University, Department of Internal Medicine, Endocrinology Section, (2001-2007)**

*Research Associate Scientist (2005-2007), Post-Doctoral Associate (2001-2005)*

Researched early embryonic mammary gland development with specific focus on the signaling proteins PTHrP, WNTs, and BMPs, and how they interact to regulate the formation of the mammary gland and bone, and how they function during breast cancer.

Wrote grants and research publications

**University of Maryland University College, Adelphi, MD (Distant education)(1999-2009)**

*Adjunct Associate Professor (2006-2009),Adjunct Instructor (1999-2005) ,*

*Distant Education Course Developer and Reviewer*

 Teaching: I have taught Introductory Biology with Laboratory online (Bio101), Molecular and Cell Biology (Bio466) online, Neurobiology online (Bio362), Life Sciences Seminar online (Bio400), Introductory Algebra online (Math009)

 Course development: I shared *development* of Molecular and Cell Biology course online. I was a *Reviewer* during development for Life Sciences Biology Seminar online, and a Reviewer during development for Neurobiology course online

**Relevant Skills**

Molecular techniques: miRNA analysis, Real-time PCR, RT-PCR, siRNAs, ChIP, ELISAs, Southern blot, Northern blot, cloning, screening, expression vectors, immunoblots, SDS-PAGE, IEF, protein expression, 2DGE, column chromatography, real-time PCR, RT-PCR, CRISPR

Histological and cellular techniques: Animal husbandry for mice and guinea pigs. Animal dissections, tissue preparation for paraffin embedding, paraffin and frozen tissue sectioning, immunohistochemistry, in situ hybridization (sections and whole embryos), micro-dissections, cell culture, apoptosis and proliferation assays, confocal, fluorescent and light microscopy, development of stable cell lines, transfections and transductions with plasmids, siRNAs and miRNAs, primary cultures, in vivo injections, in vivo manipulations in the mouse, guinea pig, and rabbit, animal husbandry, and working with immune-compromised mice, such as the patient-derived-xenograft mouse models.

**Other Skills**

Working knowledge of Microsoft Office- Word, Excel, and Powerpoint.

Working knowledge of the statistical software Graphpad Prism, Endnote, and Photoshop

Working knowledge of interpreting and presenting large datasets from microarray and NGS, such as, pathway analysis.

Development of Websites, basic knowledge of HTML and R programming (self-taught)

Bioinformatics tools through various websites, including sources at NCBI like BLAST, sequence alignment, and STRING database, DAVID, miRbase, miRTAR, and miRPath.

**Publications**

1. **Hens JR**, Sinha I, Perodin F, Cooper T, Sinha R, Plummer J, Perrone CE, Orentreich D. **2016.** Methionine-restricted diet inhibits growth of MCF10AT1-derived mammary tumors by increasing cell cycle inhibitors in athymic nude mice. BMC Cancer 16(1):349.
2. Plummer J, Park M, Perodin F, Horowitz MC, **Hens JR.**, **2016.** Methionine-restricted diet increases miRNAs that can target RUNX2 expression and alters bone structure in young mice. J Cell Biochem. 2016 May 18 (Epub ahead of print).
3. Ables, GP., **Hens, JR.**, Nichenametla, SN **2016.** Methionine restriction beyond life-span extension. Ann NY Acad. Sci. 1363:68-79.
4. Hiremath, M., Dann, P., Fischer, J., Butterworth, D., Boras-Granic, K., **Hens, J.,** Van Houten, J., Shi, W., and Wysolmerski, J. **2012.** Parathyroid Hormone-Related Protein Activates Wnt Signaling To Specify The Embryonic Mammary Mesenchyme. Development 139, 4239-4249.
5. Andrews, J.L., Kim, A.C., and **Hens, J.R**. **2012.** The Role and Function of Cadherins in the Mammary Gland. Breast Cancer Res. 14(1):203.

**Complete List of Published Work in My Bibliography (NCBI)**

http://www.ncbi.nlm.nih.gov/sites/myncbi/1lSMBHhTmvxQ0/bibliography/50617623/public/?sort=date&direction=ascending

According to ResearchGate; 658 citations, 27.25 RG score (82.5 percentile), h-index 11 (Web of Science) (as of 9/2016)

**Awards and Honors**

 Society of Developmental Biology Teaching faculty travel award (2010)

 Society of Developmental Biology Teaching faculty travel award (2008)

 Promoted to adjunct Associate Professor at University of Maryland University College (2005)

 Colorado Technical University Faculty Service Award (2005)

 ASBMR Young Investigator Award (2004)

 University of Maryland University College’s 2004 Teacher Recognition Award (2004)

**Professional memberships (past and present)**

 Society of Developmental Biology

 National Science Teaching Association

 American Society of Experimental Biology

 American Society of Cancer Research

American Association for the Advancement of Sciences

 American Society of Cell Biology

 American Society of Molecular Biology

 American Dairy Science Association

 American Society of Bone and Mineral Research

 Endocrinology Society

Research Support

1. OFAS CCL20 Hens (PI) 01/01/16- 12/31/16

The effects of methionine restriction (MR) on the mechanism of metastatic cancer through cadherin-11.

The goal of this study is to examine the effects of MR on mechanisms of cell migration through cadherin-11 in metastatic cancer. Role: PI

2. OFAS CCL21 Hens (PI) 01/01/16- 12/31/16

The effects of MR on non-small cell lung cancer

The goal of this study is to examine how MR can affect non small lung cancer in both cancer cell lines and in the PDX mouse models. Role: PI

3. OFAS CCL05 Hens (PI) 01/01/14- 12/31/14

The effects of MR on cancers induced by carcinogens

The goal of this study is to examine the mechanism of how MR can protect mice from the damaging effects of N-Nitroso-N-methylurea in a mouse model. Role: PI

4. OFAS CCL17 Hens (PI) 01/01/14- 12/31/14

The effect of methionine restriction on metastatic breast cancer

The goal of this study is to examine how MR can change the ability of cells to migrate during metastatic breast cancer. Role: PI

5. OFAS CCL18 Hens (PI) 01/01/15- 12/31/15

The effects of methionine Restriction on miRNAs in the Mouse and in Cancer Models

The goal of this study is to examine how MR can affect miRNA involved in normal mammary glands and in mouse breast cancer models. Role: PI

6. OFAS CCL19 Hens (PI) 01/01/15- 12/31/15

Methionine restriction (MR) affects on cadherin-11 (Cdh11) in normal and cancer cells

The goal of this study is to examine how MR can alter expression of cadherin-11 in both mesenchymal cells and breast cancer cells, and how this change in expression may alter function of these cells. Role: PI

7. Faculty Research Grant at St. Bonaventure University 1/01/2008-1/01/2009 Hens (PI)