

# Miriam R. Fein

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## EDUCATION

- 2010-2016      **Ph.D., Genetics**  
**Stony Brook University (SUNY)**  
**Cold Spring Harbor Laboratory**  
Dr. Mikala Egeblad  
Genetics Training Grant (2010-2011)  
Research on breast cancer cell CCR2 expression and its role in promoting immunosuppression.
- 2004-2006      **M.A., Molecular, Cellular and Developmental Biology**  
**Hunter College (CUNY)**  
*Magna Cum Laude*
- 1999-2003      **B.A., Biology**  
**Queens College (CUNY)**  
Dean's List  
Biology Department Honors

## EMPLOYMENT

- 2018- Current      **Postdoctoral Research Fellow**  
**Cold Spring Harbor Laboratory**  
Dr. Semir Beyaz  
Research on dietary regulation of intestinal cancer immunity.
- 2017-Current      **Executive Director, Science Advocacy of Long Island**  
Website: <http://scienceadvocacyli.org>  
Founded SALI, an organization for scientists and science supporters, which advocates for scientific education and legislation and encourages public engagement with science.
- 2017-2018      **Reviews Editor, *Genes & Development***  
**Cold Spring Harbor Laboratory Press**

Commissioned and edited Reviews and Outlooks for *G&D*, a scientific publication that publishes research papers in the areas of molecular biology, molecular genetics, and related fields.

- 2007-2010      **Research Associate, New York College of Osteopathic Medicine**  
Research on chronic kidney disease and transcellular sodium transport. Managed laboratory and supervised medical students and fellows.
- 2003-2005      **Research Assistant, John Jay College of Criminal Justice (CUNY)**  
Research on low copy number DNA usage in forensic analysis.
- 2002- 2004      **Research Assistant, Winthrop University Hospital**  
Clinical research studies in the Department of Nephrology. Prepared and shipped patient samples, compiled patient data, scheduled tests and meetings with patients and staff.

## SKILLS

Microscopy techniques including brightfield, fluorescence, and confocal microscopy; intravital imaging of mammary gland via skin-flap method and imaging window; intravital lung imaging; live cell imaging; *in vivo* bioluminescence imaging; immunohistochemistry and immunofluorescence.

Establishment of novel techniques and protocols including confocal intravital lung imaging (CILI); mammary imaging windows (for long-term monitoring).

Cell, molecular biology, and biochemical techniques including establishment of mammalian primary cell lines and maintenance of stable cell lines; shRNA knockdown; retroviral and lentiviral production and infection; isolation of epithelial and immune cells; flow cytometry; Western blot.

Mouse techniques including basic maintenance of colonies; intraperitoneal/ intravenous/ intramuscular/ retro-orbital injections; survival surgery; orthotopic and subcutaneous transplants of tumor cells; necropsy.

Proficient in Microsoft Office Suite (Word, Excel, Power Point), Microsoft and OS X based operating systems; Adobe Suite (Illustrator, Photoshop, Acrobat); GraphPad Prism; FACS Diva and FlowJo; Image J; Imaris Bitplane; Aperio ImageScope; Living Image.

## PUBLICATIONS

**Fein, M.R.**, He, X.Y., Almeida, A.S., Bruzas, E., Pommier, A., Eberhardt, A., Fearon, D.T., Wilkinson, J.E., dos Santos, C.O., and Egeblad, M. (2018) *Cancer cell CCR2 orchestrates suppression of the adaptive immune response* BioRxiv doi: <https://doi.org/10.1101/390187>.

Park, J., Wysocki, R.W., Amoozgar, Z., Maiorino, M., **Fein, M.R.**, Jorns, J., Schott, A.F., Kinugasa-Katayama, Y., Lee, Y., Won, N.H., Nakasone, E.S., Hearn, S.A., Kuttner, V., Qiu, J., Almeida, A., Perurena, N., Kessenbrock, K., Goldberg, M., and Egeblad, M. (2016) *Cancer cells trigger neutrophils to induce metastasis-supporting extracellular DNA traps*. *Sci Transl. Med.* 8, 361ra138.

**Fein, M.R.**, Wysocki, R.W., and Egeblad, M. (2014) *Cancer in the Spotlight: Using Intravital Imaging in Cancer Research*. Chapter in *Advances in Intravital Microscopy*, Springer. Edited by Weigert, R.

**Fein, M.R.**, Egeblad, M. (2013) *Caught in the Act: Revealing the Metastatic Process by Live Imaging*. *Disease Models and Mechanisms* 6(3): 580-93.

Youmans S.J., **Fein M.R.**, Wirkowski E., Maesaka J.K. (2013) *Demonstration of natriuretic activity in urine of neurosurgical patients with renal salt wasting*. *F1000 Research* 2: 126.

Nakasone, E., Askautrud, H., Kees, T., Park, J., **Fein, M.** and Egeblad, M. (2013) *Imaging contributions of the microenvironment to chemoresistance*. *Journal of Nuclear Medicine* 54 (Supple). p. 31. ISSN 0161-5505.

Nakasone, E.S., Askautrud, H.A., Kees, T., Park, J.H., Plaks, V., Ewald, A.J., **Fein, M.**, Rasch, M.G., Tan, Y.X., Qui, J., Park, J., Sinha, P., Bissell, M.J., Frengen, E., Werb, Z., Egeblad, M. (2012) *Imaging tumor-stroma interactions during chemotherapy reveals contributions of the microenvironment to resistance*. *Cancer Cell* 21(4): 488-503.

## PUBLICATIONS UNDER REVIEW

**Fein, M.R.**, He, X.Y., Almeida, A.S., Bruzas, E., Pommier, A., Eberhardt, A., Fearon, D.T., Wilkinson, J.E., dos Santos, C.O., and Egeblad, M. *Cancer cell CCR2 orchestrates suppression of the adaptive immune response* (Under Review, *Journal of Experimental Medicine*).

## CONFERENCE TALKS

THE BIOLOGY OF CANCER: MICROENVIRONMENT, METASTASIS, AND THERAPEUTICS (Cold Spring Harbor Laboratory, NY, 2015) *CCR2 expression in breast cancer cells modulates adaptive immune response*. **Fein, M.R.**, Almeida, A.S., Egeblad M.

## POSTER PRESENTATIONS

MECHANISMS AND MODELS OF CANCER (Cold Spring Harbor Laboratory, NY, 2018) *Cancer cell CCR2 orchestrates suppression of the adaptive immune response.* He, X.Y., **Fein, M.R.**, Almeida, A.S., Bruzas, E., Pommier, A., Eberhardt, A., Wilkinson, J.E., dos Santos, C.O., and Egeblad, M.

THE BIOLOGY OF CANCER: MICROENVIRONMENT AND METASTASIS (Cold Spring Harbor Laboratory, NY, 2017) *Targeting cancer cell CCR2 enhances synergistic immune surveillance in breast cancer.* **Fein, M.R.**, He, X., Almeida, A.S., Pommier, A., Bruzas, E., Eberhardt, A., Wilkinson, J.E., dos Santos, C., and Egeblad, M.

THE BIOLOGY OF CANCER: MICROENVIRONMENT AND METASTASIS (Cold Spring Harbor Laboratory, NY, 2017) *Escaping tumor-mediated immune suppression: radiation and the CCL2/CCR2 chemokine axis.* Puckett, L.L., He, X., Chaudhry, R., **Fein, M.R.**, Curtis, J., Maiorino, L., Chelladurai, M., Egeblad, M.

CRI-CIMT-EATI-AACR: THE INAUGURAL INTERNATIONAL CANCER IMMUNOTHERAPY CONFERENCE: TRANSLATING SCIENCE INTO SURVIVAL (New York, NY, September 2015) *Cancer cell expression of CCR2 regulates the PD-L1/ PD-1 immune checkpoint in breast cancer.* **Fein, M.R.**, Almeida, A.S., Eberhardt A., and Egeblad, M. Abstract Number 63.

NYC TUMOR MICROENVIRONMENT SYMPOSIUM (Cold Spring Harbor Laboratory, NY, 2015) *CCR2 expression in breast cancer cells modulates the adaptive immune response.* **Fein, M.R.**, Almeida, A.S., Eberhardt A., and Egeblad M. Abstract Number 11.

MECHANISMS AND MODELS OF CANCER (Cold Spring Harbor Laboratory, NY, 2014) *Chemokine receptor CCR2 promotes breast cancer through different effects in host and tumor cells.* **Fein, M.R.**, Egeblad M. Abstract Number 67.

MECHANISMS AND MODELS OF CANCER (Cold Spring Harbor Laboratory, NY, 2014) *Cancer cells trigger neutrophils to induce metastasis-supporting extracellular DNA traps.* Park, J., Wysocki, R., Amoozgar, Z., **Fein, M.**, Kinugasa, Y., Nakasone, E.S., Qiu, J., Kessenbrock, K., Almeida, A., Cappellanie, J., Perurena, N., Goldberg, M., and Egeblad, M. Abstract number 272.

AACR: MOLECULAR CANCER RESEARCH (Philadelphia, PA 2014); PROCEEDINGS OF THE AACR SPECIAL CONFERENCE: THE TRANSLATIONAL IMPACT OF MODEL ORGANISMS IN CANCER (San Diego, CA, 2013) *Understanding drug responses and resistance mechanisms using imaging in live mice.* Egeblad, M., Nakasone, E., Askautrud, H., Wysocki, R., **Fein, M.**, Kees, T., Park, J., Park, J.H. Abstract number IA11.

CANCER BIOLOGY AND THERAPEUTICS (Cold Spring Harbor Laboratory, NY, 2013)  
*Tracing the influence of the tumor microenvironment on chemoresistant clonal selection.* Park J.H., **Fein, M.R.**, Egeblad M. Abstract Number 48.

MECHANISMS AND MODELS OF CANCER (Cold Spring Harbor Laboratory, NY, 2012)  
*Visualizing contributions of the tumor microenvironment to breast cancer metastasis by regulating host expression of CCR2.* **Fein, M.R.**, Park, J.H., Dow, L.E., Premsrirut, P.K., Lowe, S.W., Egeblad, M. Abstract Number 72.

SOCIETY FOR NEUROSCIENCE (SFN, 2009) *Resveratrol-dependent SIRT1 activation affects the transmission of photoperiodic information through GPR50.* Leheste, J.R., Svokos, K., **Cohen, M.**, Dileo, J.N., Zakhary, S.M., Hallas, B.H., Torres, G. Abstract number 3318.

AMERICAN ACADEMY OF ALLERGY ASTHMA AND IMMUNOLOGY (AAAAI, 2008)  
*HSP70 and sCD40L Stimulation of Human Keratinocytes as a model for cytokine profiling in cutaneous manifestations of SLE.* Steele, R., **Cohen, M.**, Frieri, M. Abstract number 3848.

AMERICAN ACADEMY OF FORENSIC SCIENCES (AAFS, 2006) *The applicability of microchip electrophoresis in developing methods for low copy number short tandem repeat DNA profiling.* Margolis-Nunno, H., Bajda, E., **Cohen, M.**, Kobilinsky, L. Abstract number B112.