

**JULIA KIRSHNER**

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**EDUCATION**

- 1999 – 2003 **Ph.D.** Molecular and Cell Biology  
City of Hope Graduate School of Biological Sciences, Duarte, CA, USA  
Thesis: “Role of CEACAM1 in Mammary Morphogenesis”  
Advisor: John E. Shively, Ph.D.
- 1994 – 1998 **B.S.** Genetics (with Psychology minor)  
University of California at Davis, Davis, CA, USA

**PROFESSIONAL EXPERIENCE**

- 12/08 – present Member, Bindley, Biological Sciences Center of Purdue University  
Discovery Park, West Lafayette, IN
- 08/08 – present Member, Oncological Sciences Center of Purdue University Discovery  
Park, West Lafayette, IN.
- 08/08 – present Member, Purdue Center for Cancer Research, West Lafayette, IN.
- 08/08 – present Assistant Professor, Department of Biological Sciences, Purdue  
University, West Lafayette, IN, USA.
- 06/06 – 07/08 Postdoctoral Fellow, Department of Experimental Oncology, Cross  
Cancer Institute, University of Alberta, Edmonton, AB, Canada.
- 02/04 – 05/06 Postdoctoral Fellow, Life Sciences Division, Lawrence Berkeley National  
Labs, Berkeley, CA, USA.
- 07/03 – 01/04 Senior Fellow, Department of Microbiology, University of Washington,  
Seattle, WA, USA.
- 09/99 – 06/03 Graduate Student, Division of Immunology, Beckman Research Institute  
of the City of Hope National Medical Center, Duarte, CA, USA.
- 06/98 – 08/99 Research Assistant, Department of Immunology, Protein Design Labs,  
Fremont, CA, USA.

**AWARDS**

- 2010 BD Biosciences Research Grant Award Winner
- 2008 Keystone Symposium on *Inflammation, Microenvironment, and Cancer* Travel Award
- 2007 Canadian Hematology Society and Bayer Canada Research Award
- 2002 The Rachmiel Levine Student Scientific Communication Award

**FUNDING****Current Research Support**

|   |               |  |
|---|---------------|--|
| <u>National Institutes of Health</u><br>1R21CA141039                      | Kirshner (PI) | 07/01/11 – 06/30/13<br>(no cost extension until 06/14) |
| “Characterization of the Multiple Myeloma Cancer Stem Cell and Its Niche” |               |  |
| <u>Indiana CTSI</u><br>Pilot award  | Kirshner (PI) | 09/15/10 – 09/30/14                                    |
| “Malignancy-Sustaining Characteristics of Cancer-Associated Plasma”       |               |  |

**Pending Research Support**

|   |               |                     |
|---|---------------|---------------------|
| <u>National Institutes of Health (NCI)</u><br>1R21CA182224-01                           | Kirshner (PI) | 01/01/13 – 12/31/15 |
| “Phenotypic Plasticity of Breast Cancer Cells During Metastasis”                        |               |                     |
| <u>National Institutes of Health (NCI)</u><br>1R01CA177974-01                           | Kirshner (PI) | 07/01/13 – 06/30/18 |
| “Microenvironment Is a Regulator of the Multiple Myeloma Cancer Stem Cell Self-Renewal” |               |                     |

**Completed Research Support**

|  |                  |                                     |
|--|------------------|-------------------------------------|
| <u>American Cancer Society</u>   | Kirshner (PI)    | 01/01/09 – 12/31/10                 |
| <u>Purdue Center for Cancer Research Institutional Grant for Junior Faculty</u>  |                  | 30K (direct)                        |
| “Characterization of the Multiple Myeloma Cancer Stem Cell and Its Niche”  |                  |                                     |
| <u>Indiana Elks Charities, Inc.</u><br>Idea Grant  | Kirshner (co-PI) | 06/01/09 – 05/31/10<br>17K (direct) |
| “Evaluation of Parthenolide and Its Derivatives as Anti-Myeloma Cancer Stem Cell Agents”   |                  |                                     |
| <u>Purdue Center for Cancer Research</u><br>Challenge Research Award   | Kirshner (PI)    | 06/01/09 – 12/31/10<br>30K (direct) |
| “huBM Mouse Model for Pre-Clinical Testing of Anti-Myeloma Cancer Stem Cell Agents”  |                  |                                     |
| <u>Showalter Trust</u><br>Grant number: 204591   | Kirshner (co-PI) | 07/01/10 – 06/30/11<br>35K (direct) |
| “Nonlinear Optical Imaging to Measure Dynamics of Bone Marrow Colonization In a Novel 3-D Culture Model of Breast Cancer Metastasis” |                  |                                     |
| <u>ImmunoGen, Inc.</u><br>Sponsored Collaborative Program  | Kirshner (PI)    | 03/01/09 – 12/31/11<br>210K (total) |
| “Evaluation of huN901-DM1 As an Anti-Myeloma Agent In a Novel Pre-clinical 3-D Culture Model”  |                  |                                     |
| <u>Jim and Diann Robbers Endowment</u><br>Cancer Research Grant for New Investigators Award  | Kirshner (PI)    | 01/01/11 – 12/31/12                 |
| “A novel 3-D Culture Model of Breast Cancer Metastasis to Evaluate the Dynamics of Bone Marrow Colonization”                         |                  |                                     |

**TEACHING****Courses:**

BIOL53700 – Immunology (spring 2010, 2011, 2012, 2013)

BIOL69500 – Current topics in cancer biology (fall 2010, 2012)

BIOL59500 – Understanding breast cancer (fall 2010)

**Graduate students supervised:**

| <i>Dates</i>    | <i>Name</i>         | <i>Degree</i> | <i>Date Awarded</i> |
|-----------------|---------------------|---------------|---------------------|
| 05/13 – present | Esteban Orellana    | Ph.D.         |                     |
| 05/13 – present | Kayla Minser        | Ph.D.         |                     |
| 01/11 – present | Minyi (Mary) Zheng  | Ph.D.         | expected 05/14      |
| 08/10 – 12/11   | Ellen Gunn          | Withdrew      |                     |
| 08/10 – 05/12   | Nicole Sadler       | M.S.          | 05/12               |
| 05/10 – present | Mukti Parikh        | Ph.D.         | expected 05/14      |
| 05/09 – 10/09   | Kavya Venkateswaran | Withdrew      |                     |

**Dissertation committees:**

| <i>Dates</i>    | <i>Name</i>       | <i>Degree</i> | <i>Supervisor</i>    |
|-----------------|-------------------|---------------|----------------------|
| 09/11 – 08/12   | Marie Kellemen    | Withdrew      | Laurie Parker        |
| 10/10 – 12/12   | Katie Jermihov    | Ph.D.         | Andy Mesecar         |
| 09/10 – present | Hsing Hui Wang    |               | Tim Ratliff          |
| 09/10 – present | Kurt Hodges       | On leave      | Sophie Lelièvre      |
| 09/10 – present | James Woods       |               | David Colby          |
| 10/09 – 06/11   | Bridgette Krueger | M.S.          | Erik Barton          |
| 10/09 – present | Jennifer Buchman  | On leave      | David Riese          |
| 09/08 – 12/12   | Therese Salameh   | Ph.D.         | Ignacio Camarillo    |
| 09/08 – 12/11   | Sevim Dalva       | M.S.          | Elizabeth Taparowsky |
| 09/08 – 05/12   | Bing Song         | Ph.D.         | Xiaoqi Liu           |
| 09/08 – present | David Hess        |               | Steven Konieczny     |

**Preliminary exam committees:**

|      |               |                |
|------|---------------|----------------|
| 2009 | Renee Killins | Robert Geahlen |
|------|---------------|----------------|

**Undergraduate students:**

|                  |                   |                 |
|------------------|-------------------|-----------------|
| Kenneth Kim      | Purdue University | 05/13 – present |
| Tara Mojtahed    | Purdue University | 01/13 – present |
| Caleb McDaniel   | Purdue University | 06/12 – 12/12   |
| Patrick Yang     | Purdue University | 01/12 – 05/13   |
| Jamie Pierle     | Purdue University | 01/12 – 12/12   |
| Britney Harris   | Purdue University | 01/12 – present |
| Melissa O'Banion | Purdue University | 01/12 – present |
| Jake Delabre     | Purdue University | 01/11 – 10/11   |
| Frank Rutigliano | Purdue University | 11/10 – 05/12   |
| Laura Rank       | Purdue University | 08/10 – 05/13   |
| John Williams    | Purdue University | 06/10 – 05/12   |

|                  |                       |                    |
|------------------|-----------------------|--------------------|
| Brittany Metzger | Purdue University     | 06/10 – 05/12      |
| Ashley Lambrosa  | Purdue University     | 09/09 – 05/10      |
| Daniel Huynh     | Purdue University     | 06/09 – 05/10      |
| Kabindra Kafle   | Berea College         | 06/09 – 07/09      |
| Joel Cassler     | Purdue University     | 01/09 – 10/10      |
| Michael Iannotti | Purdue University     | 01/09 – 07/09      |
| Jennie Lu        | Purdue University     | 01/09 – 05/09      |
| Amanda Golemba   | Purdue University     | 01/09 – 05/09      |
| Tara Tancred     | University of Alberta | 09/07 – 05/08      |
| Malini Mahendra  | UC Berkeley           | 06/05 – 10/05      |
| Emily Sheehan    | UC Berkeley           | summer 2004        |
| Sarah Hamilton   | USC                   | summer 2001 & 2002 |

**High School Students:**

|                   |                            |                 |
|-------------------|----------------------------|-----------------|
| Farah Alucozai    | West Lafayette High School | 06/11 – present |
| Meher Taleyarkhan | Jefferson High School      | 06/10 – 03/2011 |

**Other Teaching Experience**

Workshop leader, Expanding Your Horizons, 27<sup>th</sup> Annual Conference, *San Jose State University*, San Jose, CA, USA. (March, 2005)

Teaching Assistant, Medical Immunology (BMSC 224), *University of California*, Riverside, CA, USA. (Winter, 2001)

**PROFESSIONAL ACTIVITIES & SERVICE**

|                 |  |
|-----------------|--|
| 05/12 – present | Epigenetics and Chromatin Biology (ECB) faculty search committee, Department of Biological Sciences, Purdue University |
| 03/12 – present | Bindley Biosciences Center Flow Cytometry and Cell Separation Facility advisory committee, Purdue University           |
| 03/11           | Judge, Blue Ribbon Junior Panel, 2012 Lafayette Regional Science and Engineering Fair                                  |
| 09/11 – present | Department of Biological Sciences admissions committee, Purdue University  |
| 11/10 – 03/12   | Co-head, Breast Cancer Discovery Group, Purdue Center for Cancer Research, Purdue University                           |
| 09/10 – 05/11   | Microbial Pathogenesis faculty search committee, Department of Biological Sciences, Purdue University                  |
| 08/10 – present | Alternate, Recruitment Committee, Purdue University Interdisciplinary Life Science Program (PULSe), Purdue University  |
| 07/10 – 11/11   | Animal Husbandry and Facility Operations Manager search committee, Purdue University                                   |
| 04/10 – 05/10   | College of Sciences Diversity Committee, interviews for the Head of Statistics Department, Purdue University           |
| 08/10 – present | Cancer Biology Area Committee, Department of Biological Sciences, Purdue University                                    |
| 08/09 – 08/11   | Undergraduate Honors Committee, Department of Biological Sciences, Purdue University                                   |

- 08/09 – present Head, Breast Cancer Training Program, Breast Cancer Discovery Group, Purdue Center for Cancer Research, Purdue University
- 05/09 Umbarger Award Committee, Department of Biological Sciences, Purdue University
- 05/09 Judge, Graduate Student Poster Competition, Breast Cancer Discovery Group Retreat, Purdue Center for Cancer Research, Purdue University
- 04/09 – 10/09 Flow cytometry facility manager search committee, Bindley Biosciences Center, Purdue University
- 04/09 Dual Career Couples Panel, Purdue Women's Network
- 03/09 Judge, Blue Ribbon Junior Panel, 2009 Lafayette Regional Science and Engineering Fair
- 12/08 Judge, Cancer Prevention and Control Program Retreat Graduate Student Poster Competition, Oncological Sciences Center, Purdue University
- 10/08 Judge, Latino Scholars Forum Poster Competition, Purdue University
- 10/08 – present Breast Cancer Discovery Group (BCDG), Purdue Center for Cancer Research, Purdue University
- 08/08 – 08/10 Cell, Molecular, and Developmental Biology Area Committee, Department of Biological Sciences, Purdue University
- 08/08 – 07/10 College of Sciences Grievance Hearing Committee, Purdue University

## **REVIEWER ACTIVITIES**

### ***Reviewer Activities:***

- Journals:** *Ad hoc* reviewer for BMC Cancer, Breast Cancer Research, PLOS One, Leukemia Research, Current Pharmaceutical Design, Molecular and Cellular Endocrinology, Journal of Pathology, Molecules, Journal of Controlled Release, Mini-Reviews in Medicinal Chemistry, British Journal of Pharmacology
- Books:** Art review for the *Primer to the Immune Response* (Mak, Daunders), Academic Press/Elsevier, 01/11  
Content review for Cancer Biology textbook, Academic Press/Elsevier, 04/10
- Grants:** DOD-CDMRP: Breast Cancer Research Program (BCRP):  
BCRP\_2009\_CBY-2  
BCRP\_2010\_CON-PBY-4  
BCRP\_2010\_TRN-CBY-A  
Peer Reviewed Cancer Research Program (PRCRP):  
PRCRP\_2011\_D-GC
- NIH: Recovery Stimulus Grants (RC1, RFA-OD-09-003) program, internet assisted review, 06/09  
Research Answers to NCI's Provocative Questions (RFA-CA-11-011 and 11-012), internet assisted review, 03/12

Other: Cancer Prevention Internship Program (CPIP) Purdue University, Review cycle: 03/09, 03/10  
Purdue Center for Cancer Research, Innovative Pilot Projects: 02/11

Policy review: NIH guidelines on stem cell research, 05/09

### **EDITORIAL BOARDS:**

06/12 – present Associate editor, American Journal of Blood Research

### **PROFESSIONAL AFFILIATIONS**

2001-present American Association for Cancer Research  
2011-present International Society for Stem Cell Research

### **REFEREED PUBLICATIONS** (\*Authors contributed equally)

1. Parikh, M.R., Belch, A.R., Pilarski, L.M., **Kirshner, J.** A Three-Dimensional Tissue Culture Model to Study Primary Human Bone Marrow and Its Malignancies. *JoVE*. Accepted.
2. Zheng, M. M., Zhang, Z., Bemis, K., Belch, A. R., Shively, J.E., Pilarski, L.M., **Kirshner, J.** The Systemic Cytokine Environment Is Permanently Altered in Multiple Myeloma. 2013. *PLOS ONE*. 8(3):e58504
3. Riofski, M. V.; John, J. P.; Zheng, M. M.; **Kirshner, J.**; Colby, D. A. Exploiting the Facile Release of Trifluoroacetate for the  $\alpha$ -Methylenation of the Sterically Hindered Carbonyl Groups on (+)-Sclareolide and (–)-Eburnamonine. 2011. *J. Org. Chem.* 76(10):3676-83
4. Gunn, E.J., Williams, J.T., Huynh, D.T., Iannotti, M.J., Han, C., Barrios, F.J., Kendall, S., Glackin, C.A., Colby, D.A., **Kirshner, J.** The Natural Products, Parthenolide and Andrographolide, Exhibit Anti-Cancer Stem Cell Activity in Multiple Myeloma. 2011. *Leukemia & Lymphoma*. 52(6):1085-97
5. **Kirshner, J.**, Thulien, K.J., Belch, A.R., Pilarski, L.M. Single Clone Expansion from Biclonal Waldenstrom Macroglobulinemia in a 3-D Culture Model of Reconstructed Bone Marrow. 2010. *Leukemia & Lymphoma*. 52(2):285-9. [**editor's pick**].
6. Tancred, T.M., Belch, A.R., Reiman, T., Pilarski, L.M., **Kirshner, J.** Altered Expression of Fibronectin and Collagens I and IV in Multiple Myeloma and Monoclonal Gammopathy of Undetermined Significance. 2009. *Journal of Histochemistry and Cytochemistry* 57(3):239-47.
7. **Kirshner, J.**, Thulien, K.J., Martin, L.D., Debes Marun, C., Reiman, T. Belch, A.R., Pilarski, L.M. A Unique 3-D model for evaluating the impact of therapy on Multiple Myeloma. *Blood*. 2008. *Blood* 112:2935-45.
8. Chen, C.J.\* , **Kirshner, J.\***, Sherman, M., Hu, W., Ngyuen, T., Shively, J.E. Mutation Analysis of the Short Cytoplasmic Domain of the Cell-Cell Adhesion Molecule CEACAM1 Identifies Residues That Orchestrate Acting Binding and Lumen Formation. (2007). *J. Biol. Chem.* v.282(8), pp.5749-60.
9. **Kirshner, J.\***, Jobling, M.F.\* , Pajares, M.J., Ravani, S., Glick, A., Lavin, M.F., Kozlov, S., Shiloh, Y., Barcellos-Hoff, M.H. Inhibition of TGF $\beta$ 1 Signaling Attenuates ATM Activity in

Response to Genotoxic Stress. (2006). *Cancer Research*. v.66(22), pp.10861-69. **[Cover article]**

10. **Kirshner, J.**, Hardy, J., Wilczynsky, S., Shively, J.E. Cell-Cell Adhesion Molecule CEACAM1 is Expressed in Normal Breast and Milk and Associates with  $\beta$ 1 Integrin in a 3D Model of Morphogenesis. (2004). *J. Molec. Histology*. v.35(3), pp.287-99.
11. Schumann, D., Huang, J., Clarke, P.E., **Kirshner, J.**, Tsai, S.W., Schumaker, V.N., Shively, J.E. Characterization of recombinant soluble carcinoembryonic antigen cell adhesion molecule-1. (2004). *Biochem. Biophys. Res. Commun.* v.318(1), pp.227-33.
12. **Kirshner, J.**, Schumann, D., Shively, J.E. CEACAM1, a cell-cell adhesion molecule, directly associates with annexin II in a three-dimensional model of mammary morphogenesis. (2003). *J. Biol. Chem.* v.278(50), pp.50338-45.
13. **Kirshner, J.**, Chen, C., Liu, P., Huang, J., Shively, J.E. CEACAM1-4S, a Cell-Cell Adhesion Molecule, Mediates Apoptosis and Reverts Mammary Carcinoma Cells to a Normal Morphogenic Phenotype in a 3D Culture. (2003). *Proc. Natl. Acad. Sci. USA*. v.100(2), pp. 521-26.

### **REVIEWS & BOOK CHAPTERS**

1. Andarawewa, K.L., **Kirshner, J.**, Mott, J.D., Barcellos-Hoff, M.H. "TGF $\beta$ : Roles in DNA Damage Responses", in *Transforming Growth Factor-Beta in Cancer Therapy*. Volume 2. (2007). The Humana Press Inc. ISBN: 1-58829-715-2.

### **MANUSCRIPTS SUBMITTED**

1. Sadler, N.M., Alucozai, F., **Kirshner, J.** The Effects of Chemotherapeutic Drugs on the Oral Flora.
2. Sadler, N.M., Harris, B., Metzger, B.A., **Kirshner, J.** N-cadherin Blocks Proliferation of the Multiple Myeloma Cancer Stem Cells.
3. Gunasekera, D., Gunn, E.J., Williams, J.T., Harb, W.A., **Kirshner, J.** In a Novel Humanized Bone Marrow Mouse Model (huBM/NSG) CD138 Is Dispensable As a Marker of Tumorigenic Multiple Myeloma Initiating Cells.
4. Parikh, M.R. and **Kirshner, J.** Cancer Stem Cell and Epithelial-to-Mesenchymal Transition: The Chicken or the Egg Relationship in Breast Cancer Metastasis. (review)
5. Woods, J.R., Riofski, M.V., Zheng<sup>1</sup>, M.M., O'Banion, M., **Kirshner, J.**, Colby, D.A. Four-step Synthesis of 15-Methylene-eburnamonine from (+)-Vincamine, Evaluation of Anticancer Activity, and Formation of a Michael Adduct.

### **MANUSCRIPTS IN PREPARATION**

1. Metzger, B.A., Gunn, E.J., Whiteman, K.R., Lutz, R.J., **Kirshner, J.** Maytansinoid Immunoconjugate IMG901 (huN901-DM1) Is Cytotoxic in a Three-Dimensional Culture Model of Multiple Myeloma.
2. Parikh, M.R., McDaniel, C., Jordan, C.J., Pilarski, L.M., **Kirshner, J.** Three-dimensional Tissue Culture Models of Tumor Metastasis Recapitulate Human Microenvironment.
3. Fang, Y. Parikh, M.R., **Kirshner, J.**, Irudayaraj, J. Differentiation of Cancer Cells in 2D and 3D Breast Cancer Models by Raman Spectroscopy.

4. Zheng, M. M., Riofski, M.V., Woods, J., Colby, D.A., **Kirshner, J.** 15-Methylene(-)-Eburnamonine Exhibits Anti-Cancer Activity In an *In Vitro* Model of Breast Cancer Metastasis to the Brain.
5. Metzger, B.A., **Kirshner, J.** Differentiation of Normal Mesenchymal Stem Cells into Osteoblasts Is Impaired by Systemic Factors Present in Plasma of Patients with Multiple Myeloma.
6. **Kirshner, J.** Mass Spectrometry Analysis of Plasma Protein Composition Reveals Systemic Abnormalities That Contribute to the Relapse of Multiple Myeloma.

#### **INVITED TALKS AND ORAL PRESENTATIONS**

1. Multiple Myeloma Cancer Stem Cell Niche: Self-renewal and Differentiation Lying in the Balance. *Department of Developmental & Molecular Biology*. Albert Einstein College of Medicine. Bronx, NY. November 20, 2012.
2. The Elusive Identify of the Multiple Myeloma Cancer Stem Cell: Is It All in the Niche? *City of Hope National Medical Center*. Duarte, CA. October 9, 2012.
3. Cancer Stem Cells in Multiple Myeloma. *BD Biosciences*. San Jose, CA. September 15, 2010.
4. Targeting the Malignant Core of Multiple Myeloma: A Model for Characterization of the Multiple Myeloma Cancer Stem Cell Niche. *Indiana University*. Bloomington, IN. February 15, 2010.
5. Targeting the Malignant Core of Multiple Myeloma: A Culture Model for Characterization of the Multiple Myeloma Cancer Stem Cell Niche. *Department of Basic Biomedical Sciences*. Purdue University. West Lafayette, IN. February 1, 2010.
6. Targeting the Malignant Core of Multiple Myeloma: Evaluation of Novel Therapeutic Strategies to Target the Multiple Myeloma Cancer Stem Cell. *Cancer Research Clinical Partnership: Clinical Questions in Multiple Myeloma*. *Oncological Sciences Center*. Purdue University Discovery Park. West Lafayette, IN. October 28, 2009.
7. Modeling Bone Marrow in 3-D: A Culture System for Characterization of the Multiple Myeloma Cancer Stem Cell Niche. *Department of Biomedical Engineering Seminar Series*. Purdue University. West Lafayette, IN. September 23, 2009.
8. Targeting the Malignant Core of Multiple Myeloma: A Novel Pre-clinical Model System for Targeting Multiple Myeloma Cancer Stem Cell. *Eli Lilly & Co*. Indianapolis, IN. September 3, 2009.
9. Modeling Bone Marrow in 3-D: A Culture System for Characterization of the Multiple Myeloma Cancer Stem Cell Niche. *Department of Chemistry, Biochemistry Seminar Series*. Purdue University. West Lafayette, IN. August 28, 2009.
10. Modeling Bone Marrow: A 3-D Culture System for Characterization of the Multiple Myeloma Cancer Stem Cell Niche. *Physical Sciences & Cancer Workshop*. Purdue University. May 2009.
11. Targeting the Malignant Core of Multiple Myeloma: Identifying Anti-Myeloma Cancer Stem Cell Agents. *AACR Annual Meeting*. Denver, CO. April 2009.
12. Breast Cancer Stem Cells in Disease Initiation, Progression, and Metastasis. Breast Cancer Discovery Group. *Purdue University*. West Lafayette, IN. December, 2008.
13. Targeting the Malignant Core of Multiple Myeloma. Accreditation, Purdue Center for Cancer Research. *Purdue University*. West Lafayette, IN. October 2008.



14. Targeting the Malignant Core of Multiple Myeloma. Cell Growth and Differentiation Group Meeting. Purdue Center for Cancer Research. *Purdue University*. West Lafayette, IN. October 2008.
15. Targeting the Malignant Core of Multiple Myeloma. *Indiana University School of Medicine*. Indianapolis, IN. October 2008.
16. Targeting the Malignant Core of Multiple Myeloma. Purdue Center for Cancer Research Retreat. *Purdue University*. West Lafayette, IN. September 2008.
17. A Unique Pre-clinical Model Providing Access to a Drug Resistant Population within the Multiple Myeloma Stem Cell Niche in a Novel 3-D Culture System for Bone Marrow. *ASH Annual Meeting*. Atlanta, GA, USA. December, 2007.
18. Targeting the Malignant Core of Multiple Myeloma. *Oncology Grant Rounds*. University of Alberta. November, 2007.
19. Modeling Bone Marrow: A Novel 3-D Culture System for Characterization of the Multiple Myeloma Stem Cell Niche. *City of Hope National Medical Center*. Duarte, CA. April 2007.
20. When CEACAM1 Attacks and ATM Hides: Two Examples of the Role of Microenvironment in Normal Tissue Development and Neoplasia. *University of Alberta*, Edmonton, AB, Canada. March 2006.
21. When CEACAM1 Attacks: Role of CEACAM1 in Mediating Apoptosis During Mammary Gland Morphogenesis. *LBNL*, Berkeley, CA, USA. December, 2004.
22. When CEACAM1 Attacks: Role of CEACAM1 in Mediating Apoptosis During Mammary Gland Morphogenesis. *University of California*, Berkeley, CA, USA. October, 2004.
23. Role of CEACAM1-4S in Mediating Apoptosis in 3D System of Mammary Gland Morphogenesis. *Immunology Division Meeting*, City of Hope, Duarte, CA, USA. February, 2003.
24. Role of CEACAM1 in Mammary Morphogenesis. *University of Washington*, Seattle, WA, USA. January, 2003.
25. Phosphorylation of CEACAM1-4S Induces Lumen Formation by Apoptosis in Transfected MCF-7 Mammary Carcinoma Cells. *Era of Hope, Department of Defense Breast Cancer Research Program Meeting*, Orlando, FL, USA. September, 2002.
26. Phosphorylation of CEACAM1-4S Induces Lumen Formation and Apoptosis in Transfected MCF-7 Mammary Carcinoma Cells. *13<sup>th</sup> International CEA Symposium*, Toronto, ON, Canada. August, 2002.
27. Role of CEACAM1 in Mammary Morphogenesis. *California State Polytechnic University*, Pomona, CA, USA. April, 2002.
28. Induction of Lumen Formation in MCF7 Mammary Carcinoma Cells Transfected with CEACAM1-S and Grown in Matrigel. *12<sup>th</sup> International CEA Symposium*, Providence, RI, USA. July, 2001.

## **PATENTS**

1. **Kirshner, J.** and Pilarski, L.M. Method and Apparatus for Evaluating Therapeutics on Cancer Stem Cells. Appl. No.: 12/260,926, Filed 10/29/2008 (based on provisional filing U.S. Patent no.61/000,748).

## **MISCELLANEOUS**

Fluent in Russian.