

Curriculum Vitae

Deepa Bedi, M.D, Ph.D.

Associate Professor
Biomedical Sciences
307A, Patterson Hall
College of Veterinary Medicine
Tuskegee University
Tuskegee, AL

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Email: dbedi@tuskegee.edu

United State Citizen

Education

Ph.D. 2007 Biomedical Science, Auburn University, Auburn, AL
M.D 1998 The Second Tashkent State Medical Institute, Uzbekistan

Certification: United States Medical Licensing Examination and Education
Commission of Foreign Medical Graduates (ECFMG certified)

Professional Experience

Present	Associate Professor, Biomedical Sciences, Tuskegee University
2013-	Assistant Research Professor, Department of Pathobiology, Auburn
2012-2013	Research Fellow II, Department of Pathobiology, Auburn University
2010-2011	Research Fellow I, Department of Pathobiology, Auburn University
2007-2010	Postdoctoral Fellow, Department of Pathobiology, Auburn University
2000-2001	Graduate Teaching Assistant, Troy University
2000	Adjunct professor, Chemistry Lab, Troy University
1998-1999	Practicing Physician, Delhi, India

Teaching:

2000	Adjunct Professor, Chemistry Lab, Troy state University, Troy, AL
2001	Teaching Assistant, Arts and Science, Troy State University
2003	Instructor, Molecular Biology Techniques, Auburn University
2007	Instructor, Molecular Biology Techniques, Auburn University
2008	Instructor, Molecular Biology Techniques, Auburn University
2009	Instructor, Molecular Biology Techniques, Auburn University
2013	Physiology, Nutrition and Metabolism, Auburn University
2013-2020	Veterinary Physiology, College of Veterinary Medicine, Tuskegee University

2015 Adjunct Professor, Auburn University, Biol 2201(Ana &Phys II)
2016 Adjunct Professor, Auburn University, Biol 4353, Histology (Biol 4343)

Major Research Interests

Targeted anticancer drug and siRNA delivery
Phage display for biomarker discovery
Cancer metastasis
Health Disparity

Scholarships, Awards, and Honors

2020 Sigma-Xi research member
2017 Outstanding Research Performance Award, Tuskegee University
2010 Best Poster Award at the international conference "Particles 2010: May, FL
2007 Outstanding Graduate Student, Auburn University
2005 Recipient of Presidential Fellowship
2004 Recipient of Presidential Fellowship
2003 Recipient of Presidential Fellowship
2002 Recipient of Presidential Fellowship
2001 Recipient of Cellular and Molecular Biology Fellowship
1998 Best Student Award, Second Tashkent Medical Institute, Tashkent, Uzbekistan

Professional Membership

American Diabetes Association (Member)
ASCB (American Society of Cell Biology)
Sigma-Xi
CMMI Game Changer Academies

Reviewer

1. Journal 'Bioengineered Bugs'
2. Journal 'PLoS One'
3. Journal 'Molecular Imaging & Biology'
4. Journal 'Archivum Immunologiae et Therapiae Experimentalis'
5. Journal 'Biomarker Insights, Libertas Academica'
6. Journal 'Molecular Pharmaceutics'
7. Journal "Jove"
8. Journal of Ovarian Cancer Research
9. Cancers (Basel)

Member of Editorial Board

Biomedical Engineering and Computational Biology

Research Grant Reviews

Ad hoc reviewer

FCT - Fundação para a Ciência e a Tecnologia Lisboa, Portugal
Puerto Rico Science, Technology and Research Trust

Dissertation Committee Member

Thaer Mhalal (PhD Candidate, 2013), Biomedical Sciences, Tuskegee University - (Aymen Sayegh, PI)
Ropak Chaudhary (PhD Candidate, 2013), Biomedical Sciences, Tuskegee University (Dr. Gopal Reddy, PI)
Taha Ramzi, Master's Veterinary Sciences, 2013, Tuskegee University- (Dr. Kamal Khazal, PI)
Khaled Aldahami, Master's Veterinary Sciences, 2013, Tuskegee University- (Dr. Woubit, PI)
Myles Davis (Master's Candidate, 2017), Tuskegee University (Primary Mentor)
Henry Henderson (Graduated, PhD 2019), IBS program, Tuskegee University, (Primary Mentor)
Kelvin Jones (Graduated PhD, 2019), IBS program, Tuskegee University, (Primary Mentor)
Dequarisu King (PhD Candidate, 2020), Tuskegee University

Graduate Students Directed

Elizabeth Fernandes, PhD student from Portugal 2010-2011, Auburn University
Shin Horikawa, PhD student, 2010-2011, College of Engineering, Auburn University
Mohiuddin Ovee, Ph.D. Student, 2009, Biomedical Sciences, CVM

Undergraduate Students Directed

James Diskin, Auburn-Biology, 2011-2013, admitted to VCOM, Auburn, AL
Kistler Ulmer, Summer Research Program, 2013, Tuskegee
Neil Gruber, Merit Scholar, 2013, Tuskegee
Caralyna Stone, Veterinary School Undergraduate, 2014
Brandi Roseman, Veterinary School Undergraduate, 2014
Muhammad Amatullah, Biology, Work Study Student
Myles Davis, Tuskegee University (Primary Mentor for his project)
Spencer Nzilla (Primary Mentor for her project)
Mentored students at Alabama State University for the NSF-REU program (2017, 2018) coordinated by Dr. Komal Vig.

Publications

Peer Reviewed Journal Articles

1. **Deepa Bedi**, Kristen J. Clarke, John C. Dennis, Brandon L. Brunson, Edward E. Morrison and Robert L. Judd 2006. Endothelin-inhibits adiponectin secretion through a phosphatidylinositol 4,5- bisphosphate/actin dependent mechanism.

- Biochemical and Biophysical Research Communications. 2006; 23; 345(1):332-339.
2. Brandon L. Brunson; Qiao Zhong; Kristen J. Clarke; **Deepa Bedi**; Tim D. Braden; Edzard van Saten; Robert L. Judd. Serum concentrations of adiponectin and characterization of adiponectin protein complexes in dogs. *American Journal of Veterinary Research* 2007 Jan; 68(1):57-62.
 3. Jayanna P.K., **Bedi D.**, Deinnocentes P., Bird R.C. and Petrenko V.A. Landscape Phage Probes for PC3 Prostate Carcinoma cells. 2009 *Protein Engineering, Design and Selection* Volume 23, Issue 6Pp. 423-430
 4. Wang T, D'Souza GG, **Bedi D**, Fagbohun OA, Potturi LP, Papahadjopoulos-Sternberg B, Petrenko VA, Torchilin VP. Enhanced binding and killing of target tumor cells by drug-loaded liposomes modified with tumor-specific phage fusion coat protein. *Nanomedicine (Lond)*. 2010 Jun;5(4):563-74.
 5. Prashanth K Jayanna, **Deepa Bedi**, James W Gillespie, Patricia DeInnocentes, Tao Wang, Vladimir P Torchilin, Richard C Bird, Valery A Petrenko,. Landscape Phage Fusion Protein-mediated Targeting of Nanomedicines Enhances their Prostate Tumor Cell Association and Cytotoxic Efficiency. *Nanomedicine: Nanotechnology, Biology and Medicine*. 2010 August; 6(4): 538–546.
 6. **Deepa Bedi**, Tiziana Musacchio, Olusegun A. Fagbohun, James W. Gillespie, Patricia Deinnocentes, R. Curtis Bird, Lonnie Bookbinder, Vladimir P. Torchilin and Valery A. Petrenko. Delivery of siRNA into breast cancer cells via phage fusion protein-targeted liposomes (2010). *Nanomedicine: Nanotechnology, Biology and Medicine* Volume 7, Issue 3, June 2011, Pages 315–323.
 7. Horikawa S, **Bedi D**, Li S, Shen W, Huang S, Chen IH, Chai Y, Auad ML, Bozack MJ, Barbaree JM, Petrenko VA, Chin BA. Effects of surface functionalization on the surface phage coverage and the subsequent performance of phage-immobilized magnetoelastic biosensors. *Biosens Bioelectron*. 2011 Jan 15;26(5):2361-7.
 8. Wang T, Kulkarni N, **Bedi D**, D'Souza GG, Papahadjopoulos-Sternberg B, Petrenko VA, Torchilin VP. In vitro optimization of liposomal nanocarriers prepared from breast tumor cell specific phage fusion protein. *Drug Target* September 2011 Volume 19, Number 8, , pp. 597-605(9).
 9. Olusegun A. Fagbohun, **Deepa Bedi**, Natalia I. Grabchenko, Patricia A. Deinnocentes, Richard C. Bird, and Valery A. Petrenko. 2012 Landscape phages and their fusion proteins targeted to breast cancer cells. *Protein Engineering, Design and Selection*. 2012 Volume 25, Issue 6, Pp. 271-283.
 10. Shin Horikawa, Suiqiong Li, **Deepa Bedi**, Wen Shen, I-Hsuan Chen, Yating Chai, Maria Auad, Michael Bozack, James Barbaree, Valery Petrenko, Bryan Chin. Effects

of Surface Phage Coverage on the Performance of Wireless Phage-Immobilized Magnetoelastic Biosensors. ECS Trans. 2010 volume 33, issue 8, 41-48.

11. E Fernandes, **Deepa Bedi**, Suiqiong Li, Shin Horikawa, Andreas Ebner, Michael Leitner, Peter Hinterdorfer, Leon Kluskens, Joana Azeredo, Bryan Chin, Valery Petrenko. Model interface for pathogens detection systems. Associação Portuguesa Microbiologia, 2012, 11-37.
12. **Deepa Bedi**, MD, Olusegun A. Fagbohun, Vasily A. Petrenko Jr., Andreas Ebner, Michael Leitner, Peter Hinterdorfer, PhD and Valery A. Petrenko. 2012 Targeted Delivery of siRNA into Breast Cancer Cells via Phage Fusion Proteins. Mol. Pharmaceutics, 2013 Feb 4;10(2):551-9.
13. **Bedi D**, Gillespie JW, Petrenko VA. Selection of pancreatic cancer cell-binding landscape phages and their use in development of anticancer nanomedicines. Protein Engineering, Design and Selection. 2014 Jul;27(7):235-43
14. James W. Gillespie, Amanda L. Gross, Anatoliy T. Puzyrev, **Deepa Bedi**, and Valery A. Petrenko. Combinatorial synthesis and screening of cancer cell-specific nanomedicines targeted via phage fusion proteins. Front Microbiol. 2015; 6: 628.
15. **Deepa Bedi**, John C. Dennis, Edward E. Morrison and Robert L. Judd. Regulation of intracellular trafficking and secretion of adiponectin by myosin II. Biochemical and Biophysical Research Communications. 2017 Aug 19;490(2):202-208.
16. **Deepa Bedi**, Komal Vig, Shilpa Waduwawara, Rajeev S. Samant and Clayton Yates. Gene signature for predicting worse relapse-free survival with basal-like breast cancer. 2017. Research Reports. (1,1).
17. Henry Henderson, Balasubramanyam Karanam, Rajeev Samant, Komal Vig, Shree R Singh, Clayton Yates and Deepa Bedi. Neuroligin 4X Overexpression in Human Breast Cancer is Associated with Poor Relapse-Free Survival. 2017, PLOS One Dec 15;12(12).
18. Kelvin M. Jones, Balasubramanyam Karanam, Jacqueline Jones-Triche, Maninder Sandey, Henry J. Henderson¹, Rajeev S. Samant, Samuel Temesgen, Clayton Yates and **Deepa Bedi**. 2018. Phage Ligands for Identification of Mesenchymal-Like Breast Cancer Cells and Cancer-Associated Fibroblasts. Frontiers in Oncology. 2018.
19. Angajala, Anusha; Mothershed, Essynce; Davis, Melissa B; Tripathi, Shweta; He, Qinghua; **Bedi, Deepa**; Dean-Colomb, Windy; Yates, Clayton. Translational oncology. 2019 Mar; 12 (3) :493-501. Quadruple Negative Breast Cancers (QNBC) demonstrate subtype consistency among Primary and Recurrent or Metastatic Breast Cancer.
20. **Bedi D**, Henderson HJ, Manne U, Samuel T. Camptothecin Induces PD-L1 and Immunomodulatory Cytokines in Colon Cancer Cells. Medicines (Basel). 2019 Apr 24;6(2). pii: E51. Doi: 10.3390/medicines6020051.

21. Jonathan Marable, Damien Ruiz, Anil K. Jaiswal, Ritankar Bhattacharya, Robert Pantazes, Payal Agarwal, Amol S. Suryawanshi, **Deepa Bedi**, Amarjit Mishra, Bruce F. Smith & Maninder Sandey Nanobody-based CTLA4 inhibitors for immune checkpoint blockade therapy of canine cancer patients. *Scientific Reports* volume 11, Article number: 20763 (2021)
22. Rachel Martini, Princesca Delpa, Timothy R Chu, Kanika Arora, Brittany Lord, Akanksha Verma, **Deepa Bedi**, Balasubramanyam Karanam, Isra Elhussin, Yalei Chen, Endale Gebregzabher, Joseph K Oppong, Ernest K Adjei, B Awuah, MB Muleta, E Abebe, I Kyei, FS Aitpillah, MO Adinku, K Ankomah, EB Osei-Bonsu, DA Chitale, JM Bensenhaver, DS Nathanson, L Jackson, LF Petersen, E Proctor, B Stonaker, KK Gyan, LD Gibbs, Z Manojlovic, RA Kittles, J White, CC Yates, U Manne, K Gardner, N Mongan, E Cheng, P Ginter, S Hoda, O Elemento, N Robine, A Sboner, JD Carpten, L Newman, MB Davis African Ancestry Associated Gene Expression Profiles in Triple Negative Breast Cancer Underlie Altered Tumor Biology and Clinical Outcome in Women of African Descent. *Cancer Discovery*, 19 Sep 2022, :CD-22-0138 DOI: 10.1158/2159-8290.cd-22-0138 PMID: 36121736.
23. Damien Ruiz, Chloe Haynes, Jonathan Marable, Chetan Pundkar, Rebecca L Nance, **Deepa Bedi**, Payal Agarwal, Amol S Suryawanshi, Amarjit Mishra, Bruce F Smith, Maninder Sandey. Development of OX40 agonists for canine cancer immunotherapy. *iScience*, 105158

Book Chapter

Prashanth K. Jayanna, **Deepa Bedi**, Patricia Deinnocentes, Tao Wang, Vladimir P. Torchilin, R. Curtis Bird, and Valery A. Petrenko (2009). Towards Phage-Targeted Nanomedicines for Prostate Cancer. In: *New Progresses and Challenges in Pharmaceutical Sciences* (Edited by: Prof. A. Atilla Hincal/ Prof. Nevin Celebi/ Assoc. Prof. Nilüfer Yüksel). 3rd BBBB International Conference on Pharmaceutical Sciences. TUFTAD Pharmaceutical Sciences Series. Baltic-Balaton-Bled-Bosphorus

James W. Gillespie, Amanda L. Gross, Anatoliy T. Puzyrev, Deepa Bedi, and Valery A. Petrenko. Combinatorial synthesis and screening of cancer cell-specific nanomedicines targeted via phage fusion proteins (2017). In. *Filamentous Bacteriophage in Bio/Nano/Technology, Bacterial Pathogenesis and Ecology*. Front Microbiology.

Selected Abstracts and Proceedings

1. Clarke KJ, **Bedi D**, Vaithinathan T, Judd RL. Impact of Streptozotocin-induced Diabetes and Insulin Therapy on Plasma Adiponectin Levels. *Diabetes*. 2004; 53:A457 (1912-PO).

2. Vaithianathan T, **Bedi D**, Kanju PM, Parmeshhwaram K, R.L. Judd, V. Suppiramaniam. Functional Alteration of Synaptic Glutamate Receptors in Streptozotocin (STZ) Diabetic Rats. *The FASEB Journal* 2004; 18(4):A580 (396.7).
3. Wang J, **Bedi D**, Clarke J, Brunson B, Ding M, Judd R L. Central leptin and insulin administration on peripheral insulin sensitivity and plasma adiponectin concentration. *The FASEB Journal* 2004; 18(4); A137 (120.7).
4. **Bedi D**, Clarke KJ, Zhong Q, Judd RL. Endothelin-1 stimulates adiponectin secretion through brefeldin-sensitive pathway. *Diabetes* 2005; 54; A349 (1442-P).
5. **Bedi D**, Clarke KJ, Dennis JC, Brunson BL, Morrison EE, Judd RL. Endothelin-inhibits adiponectin secretion through a phosphatidylinositol 4, 5-bisphosphate/actin dependent mechanism. *Diabetes* 2006; 55; A306 ;A (1308-P).
6. Thirumalini Vaithianathan, **Deepa Bedi**, Patrick M Kanju, Parameshwaran Kodeeswaran, Robert L Judd and Vishnu Suppiramaniam. Functional Alteration of Synaptic Glutamate Receptors.in Streptozotocin (STZ) Diabetic Rats Soc. Program No. 404.19. *2004 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, 2004. Online. Presented.
7. Thirumalini Vaithianathan, **Deepa Bedi**, Kanju M. Patrick, Kodeeswaran Parameshwaran, Lori L. McMahon, Robert L. Judd and Vishnu D. Suppiramaniam. Synaptic AMPA Receptor Dysfunction: A mechanism for cognitive decline in Type-1-Diabetic Rats. 9th International Conference on Alzheimer's disease and Related Disorders. Presented.
8. Thirumalini Vaithianathan, **Deepa Bedi**, Patrick M Kanju, Parameshwaran Kodeeswaran, Robert L Judd and Vishnu Suppiramaniam. Glutamatergic synaptic dysfunction in the brain of streptozotocin-diabetic rats. ASPET Experimental Biology 2004. Presented.
9. Vaithianathan, T., **Bedi, D.**, Kanju, P.M., Parameshwaran,K., Bahr, B.A., Dityatev, A., McMahon L.L., Judd, L.R and Suppiramaniam, V. Glutamate Receptor Deregulation in STZ-Diabetic Animals. 24th Annual Meeting of the Southeastern Pharmacology Society, October, 2003. Presented.
10. Kristen J. Clarke, **Deepa Bedi**, Thirumalini Vaithianathan, and Robert L. Judd. Impact of Streptozotocin-Induced Diabetes and Insulin Therapy on Plasma Adiponectin Levels. American Diabetes Association, 64th Scientific Sessions 2004.
11. Kristen, Clarke., Bedi, D., **Vaithianathan, T.** and Judd, R.L. Impact of Streptozocin-Induced Diabetes and Insulin Therapy on Plasma Adiponectin levels. Auburn University Research Forum, Abstract 2004.

12. Vaithianathan, T., **Bedi, D.**, Kanju, P.M., Parameshwaran, K., Dityatev, A., Judd, L.R and Suppiramaniam, V. Functional alteration of synaptic AMPA receptors in STZ-diabetic rats Auburn University Research Forum, Abstract 2004. Presented.
13. Vaithianathan, T., **Bedi, D.**, Kanju, P.M., Parameshwaran, K., Bahr, B.A., Dityatev, A., McMahon L.L., Judd, L.R and Suppiramaniam, V. Glutamate Receptor Deregulation in STZ-Diabetic Animals. 24th Annual Meeting of the Southeastern Pharmacology Society, October, 2003. Presented.
14. Vaithianathan, T., **Bedi, D.**, Kanju, P.M., Wang, Z., Bahr, B.A, Dityatev, A., Judd, L.R and Suppiramaniam, V. Evidence OF AMPA - Glutamate Receptor Dysfunction in Brain of Streptozotocin-Diabetic Rats. Program No. 375.18. *2003 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, 2003. Online. Presented.
15. Thirumalini Vaithianathan, **Deepa Bedi**, Patrick Kanju, Robert Judd and Vishnu Suppiramaniam: Glutamate (AMPA) Receptor Dysfunction in Brain of Streptozotocin-Diabetic Rodents. American Diabetes Association, 63rd Scientific Sessions 2003. Presented.
16. **Deepa Bedi**, Karen Wolfe, John C. Dennis, Eric P. Plaisance, Tim D. Braden, Edward E. Morrison, Robert L. Judd. Regulation of intracellular trafficking and secretion of adiponectin by Myosin II. American Diabetes Association, 65rd Scientific Sessions 2007. (1384-P) Presented
17. Landscape phage peptides specific for MCF-7 breast cancer cells. Fagbohun O. A., Jayanna P.K, **Bedi D.** and V.A. Petrenko. Proceedings of nanomedicine and drug delivery symposium, Boston, Nov. 2-3,
18. Landscape Phage Probes for Breast Cancer Cells. Fagbohun O. A., **Bedi D.**, Jayanna P.K., Deinnocentes P.A., Bird R.C., and V.A. Petrenko. NSTI 2008, Boston, June 1-5, Vol 2 Pages 457-460.
19. Pharmaceutical liposomes targeted to PC3 prostate carcinoma cells by fusion phage protein. P.K. Jayanna, T. Wang, **D. Bedi**, P. Deinnocentes, R.C. Bird, V.P. Torchilin, V.A. Petrenko. NSTI 2009, Houston, May 3-7.
20. Landscape Phage Probes for Breast Cancer Cell receptors. Fagbohun O. A., **Bedi D.**, Jayanna P.K., Deinnocentes P.A., Bird R.C., and V.A. Petrenko. NSTI 2009, Houston, May 3-7.
21. Shin Horikawa, Suiqiong Li, **Deepa Bedi**, I-Hsuan Chen, Maria Auad, Michael Bozack, James Barbaree, Valery Petrenko, Bryan Chin. Surface-Functionalized Magnetoelastic Resonators Interfaced with a Landscape Phage Layer for Wireless Biosensing Applications. The Electrochemical Society, 2010, 40, 2272-2272.

22. Neuroligin 4X overexpression in breast cancer is associated with poor-relapse free survival. Henry Henderson, Balasubramanyam Karanam, Rajeev Samant, Komal Vig, Shree R Singh, Clayton Yates and Deepa Bedi. Nanobiosummit, 2017, University of South Alabama, Mobile, AL.
23. Endosomal Escape of Bacteriophage in MDA-MB-231 breast cancer. Mashunda Longmire, Deepa Bedi and Komal Vig. Center of Nanobiotechnology Research, Alabama State University, Montgomery, AL, 2017.
24. Application of Phage Display to identify Chemotherapeutic treated colon cancer. Demetrius McAtee, Deepa Bedi and Komal Vig. Emerging Researchers National Conference (ERN) in REU. ALASU. STEM. Washington, D.C, February 22-24, 2018.
25. Identification of Novel Peptides against Breast Cancer Cells Undergoing Epithelial-to-Mesenchymal Transition (EMT) Utilizing Phage Display. KM Jones, B Karanam, Jones-Triche, R Samant, C Yates, D Bedi. AMERICAN JOURNAL OF PATHOLOGY 188 (10), 2412-2412
26. Neuroligin 4X: A neural cell adhesion molecule, in breast cancer. HJ Henderson, K Balasubramanyam, R Samant, K Vig, SR Singh. Cancer Research 78 (13 Supplement), 25-25
2018
27. Identification of peptides binding to mesenchymal subtype breast cancer from phage display peptide library. KM Jones, R Samant, S Singh, D Bedi. Cancer Research 78 (13 Supplement), 1078-1078.
28. Topoisomerase-I inhibitors induce the expression of clinically relevant immunomodulators in colon cancer cells. T Samuel, SH Shaddox, D Bass, D Bedi, P Datta. The Journal of Immunology 204 (1 Supplement), 241.4-241.4

Poster Presentations

1. Tao Wang, Gerard GM D'Souza, **Deepa Bedi**, Prasanna Potturi, Brigitte Papahadjopoulos-Sternberg, Valery A Petrenko, and Vladimir P Torchilin (2009) Spontaneous Incorporation of the MCF-7 Cell-Specific Phage Fusion Major Coat Protein pVIII into Doxil Enhances their Association with Target Cancer Cells and Killing In Vitro. American Journal of Pharmaceutical Education 2009; 73 (4) Article 57. (Meeting Abstract); 110th Annual Meeting of the American Association of Colleges of Pharmacy, Boston, Massachusetts, July 18-22, 2009. (Poster Presentation).
2. Olusegun A. Fagbohun, **Deepa Bedi**, Stephanie Koehler, Patricia Deinnocentes, Richard C. Bird, and Valery A. Petrenko. Landscape phage probe for cytokeratins 8/18. Phi Zeta Research Day Forum, November 11, 2009 - Joy Goodwin Rudd Student Center, Auburn, AL

3. James W. Gillespie, **Deepa Bedi**, and Valery A. Petrenko. Optimization of a Breast Cancer Specific Phage Probe into Liposomal Doxil. Phi Zeta Research Day Forum, November 11, 2009 - Joy Goodwin Rudd Student Center, Auburn, AL.
4. Olusegun A. Fagbohun, **Deepa Bedi**, Stephanie Koehler, Patricia Deinnocentes, Richard C. Bird, and Valery A. Petrenko. Landscape phage probe for cytokeratins 8/18. Phi Zeta Research Day Forum, November 11, 2009 - Joy Goodwin Rudd Student Center, Auburn, AL.
5. James W. Gillespie, **Deepa Bedi**, and Valery A. Petrenko. Optimization of a Breast Cancer Specific Phage Probe into Liposomal Doxil. Phi Zeta Research Day Forum, November 11, 2009 - Joy Goodwin Rudd Student Center, Auburn, AL.
6. Fagbohun O.A., Jayanna P.K., **Bedi D.**, Deinnocentes P.A, Bird R.C. and V.A. Petrenko. Landscape Phage Probes for Breast Cancer Cells. Nanomedicine and Drug Delivery Symposium, Nano DDS'07, Northeastern University, Boston, MA, November 2-3.
7. **Deepa Bedi**, James Gillespie, Olusegun A. Fagbohun and Valery A Petrenko. siRNAs delivery into cancer cells by phage-fusion proteins. Particles 2010, Regal Sun Resort, May 22-25, 2010.
8. Development of Phage Ligands for targeting Non-Small Cell Lung Cancer. Lixia Wei, **Deepa Bedi**, James Gillespie, Amada Hazi, Tiffany O'Dell and Valery Petrenko. Phi Zeta Research Emphasis Day, Phi Zeta Epsilon Chapter, College of Veterinary Medicine, Auburn University, November 9, 2011. P.60.
9. **Deepa Bedi**, Olusegun A. Fagbohun, Vasily A. Petrenko, Andreas Ebner, Michael Leitner, Peter Hinterdorfer, and Valery A. Petrenko. Nanophage-Mediated Targeted Delivery of siRNA into Breast Cancer Cells. Phi Zeta Research Emphasis Day, Phi Zeta Epsilon Chapter, College of Veterinary Medicine, Auburn University, November 9, 2011. p.50.
10. **Deepa Bedi**, James Gillespie, Amanda Hazi, V. Torchilin , Valery Petrenko. Development and High Throughput Screening of Targeted Anticancer Nanomedicines. Houston, Tx, 2012.
11. Kistler Ulmer, **Deepa Bedi**. Phage probes to identify Epithelial to Mesenchymal transitioned breast cancer cells. Tuskegee Biomedical Symposium, September 2014, Tuskegee University (**2nd prize winner**).
12. Henry Henderson, Balasubramanyam Karanam, Rajeev Samant, Komal Vig, Shree R Singh, Clayton Yates and **Deepa Bedi**. Neuroligin 4X overexpression in breast cancer is associated with poor-relapse free survival. 17th Biomedical Research Symposium, Tuskegee University, Tuskegee, AL, 2016.

13. Demetrius McAtee, **Deepa Bedi** and Komal Vig. Application of Phage Display to identify Chemotherapeutic treated colon cancer. Annual Biomedical Research for Minority Students (ABRCMS), Phoenix, AZ, Nov1-4, 2018.
14. Temesgen Samuel, Sage H Shaddox, Danielle Bass, **Deepa Bedi** and Pran Datta. Topoisomerase-I inhibitors induce the expression of clinically relevant immunomodulators in colon cancer cells. J Immunol May 1, 2020, 204 (1 Supplement) 241.4;
15. Spatial transcriptome profiling of tumor and tumor microenvironment of Triple Negative Breast Cancer in patients of African American and European American descent. Deepa Bedi, Balasubramanyam Karanam, Isra Elhussin, Chitra R Nayak, Temesgen Samuel and Clayton Yates. MICR, Philadelphia, Sep 16-19, 2022.

Invited Presentation

NCI Alliance for Nanotechnology in Cancer Annual Principal Investigators' Meeting 2011, Boston, MA. Development and High Throughput Screening of Targeted Anticancer Nanomedicines

NCI Alliance for Nanotechnology in Cancer Annual Principal Investigators' Meeting 2012, Boston, MA. Development and High Throughput Screening of Targeted Anticancer Nanomedicines

Seminar series at Alabama State University 2016, Tumor-targeted phage-based therapeutics.

Nanobiosummit, Auburn University, Auburn, AL, 2017, Role of Neuroligin 4X in breast cancer.

UAB lecture series, UAB, Birmingham. AL. 2018. Phage display for anti-cancer targeted drug delivery.

Patent Applications

1. PCT Patent Application No. PCT/US2011/035390 entitled "Targeted Particles Comprising Landscape Phage Fusion Proteins and Heterologous Nucleic Acid". Inventor(s): Valery Petrenko, Deepa Bedi, Olusegun Fagbohun, James Gillespie. Filing Date 5/5/2011.
2. US Provisional Patent Application No. 62949,131 entitled "IDENTIFICATION OF EPITHELIAL TO MESENCHYMAL BREAST CANCER". Inventor(s): Deepa Bedi, Kelvin Jones. Filing date December 17, 2019.

Provisional Patent Applications

1. U.S. Provisional Patent Application No. 61/583,850 entitled "Phage Fusion Proteins as Interface for Detection Systems" Inventor(s): Valtery A. Petrenko, Deepa Bedi, Elisabete R. Fernandes, Vasily A. Petrenko, Jr., Bryan A. Chin, Leon D. Kluskensa, Joana Azeredo. Filing Date: 1/6/2012

2. U.S. Provisional Patent Application No. 61/565,803 entitled "Cancer-Specific Phage Fusion Proteins". Inventor(s): Valery A. Petrenko, Olusegun A. Fagbohun, Deepa Bedi, James W. Gillespie, Lixia Wei. Filing Date: 12/01/2011. AU Invention No. 2011-061.
3. AU Invention No. 2011-061 & Newly Filed U.S. Provisional Patent Application No. 61/534,138 entitled "Cancer-Specific Phage Fusion Proteins" Inventor(s): Valery A. Petrenko, Olusegun A. Fagbohun, Deepa Bedi, James Gillespie, Lixia Wei. Filing Date: 9/13/2011

Grants

Co-Investigator

Completed

1. NIH (NCI) Project Number: 1U54CA151881-0. Title: CENTER FOR TRANSLATIONAL CANCER NANOMEDICINE
Project Start Date: 1-SEP-2010 Project End Date: 31-JUL-2015
Project Funding Information for 2010: Total Funding: \$2,596,014
PI: Torchilin V.P. Project #4 PI: Petrenko V.A. **Co PI: Deepa Bedi**
le: "Tumor Targeting Nanocarriers using Phage Proteins". Total Funding: \$1,700,000
2. US Department of Agriculture; GRANT: G00004608
FUND Name: USDA-2009-34605-34605-19805. Title: Phage-based devices for isolation and detection of threat agents
7/15/2009-7/14/2011. Award Amount: \$65,000 (direct)
Co-Investigator: Deepa Bedi
3. NIH (NCI)
Grant# 1 R01 CA125063-01. Drug Delivery Carriers Targeted to Breast Tumor by Fusion Phage Proteins
2/2/2007-2/1/2012; \$1,990,844
Co-Investigator: Deepa Bedi

Principal Investigator

Completed

1. Pilot Project for Center for Nanobiotechnology Research at Alabama State University
Tumor-targeted ligand mediated cytoplasmic delivery of siRNA-chitosan nanoparticle (03/2016-02/2018) \$40,000
Goal: To develop chitosan-based therapeutic siRNA-based nanoparticles capable of endosomal escape.
2. Score SC2 (NIH/NCI/NIGMS) **Impact score 14, Perfect Score**
5 SC2 CA211028 08/01/2016-07/31/2019 \$440000

Phage display to identify Epithelial to Mesenchymal transitioned breast cancer cells.

Active

Score SC1 (NIH/NCI/NIGMS)

SC1 GM136521 08/20/2020-07/31/2024

\$1,48,0000

Evaluation of HSPD1 (Heat Shock Protein 60) as a theranostic target for breast cancer.