

Komal Vig, Ph.D.

Associate Professor of Biology

Phone-334 (229) 5132 • Email: komalvig@alasu.edu

(a) Education/Training

PhD 1999, University of Delhi, India
M. Phil 1994, University of Delhi, India
MSc 1992, University of Delhi, India
BSc (Honours) 1990, University of Delhi, India

(b) Professional Appointments

2013- Current Associate Professor of Biology, Alabama State University, Montgomery, AL.
2009-2013 Assistant Professor of Biology, Alabama State University, Montgomery, AL.
2011-present Assistant Professor of Microbiology (Adjunct), The University of Alabama at Birmingham (UAB), AL
2006-2009 Post doctoral Research Associate, Alabama State University, Montgomery, USA.
2003-2006 Research Associate, University of Delhi, Delhi, India.
2003-2006 Visiting Assistant Prof, University of Delhi, Delhi, India.
2002-2003 Research Scientist/Consultant, Fluorosis Research and Rural Development Foundation, New Delhi, India.
2000-2002 Post-doctoral Scientist, CSIRO Land and Water, Adelaide, Australia.
1999-2000 Research Associate, Indian Council of Agricultural Research, India.
1994-1999 Senior and Junior Research Fellow, University Grant Commission, India.

(c) Ongoing Research Support

US Dept. of Education (MSEIP): Increasing Minority Access to NanoBiotechnology and Emerging Science and Technology in Alabama (IMANESTA), \$749, 661, 2015-2018 (PI).
NSF-REU: Development of Safe Nanomaterials for Biological Applications, \$3,36,634, 2014-2017 (PI)
NSF-MRI: Acquisition of a Roche/454 GS-Jr for Research and Training in Microbiology at Alabama State University, \$107,000, 2010-2011 (Co-PI)
NSF-Centers of Research Excellence in Science and Technology (CREST) at Alabama State University Pilot Project: Development of nanomaterials as viral inhibitors, \$ 20,000, (PI)
BP/Marine Environmental Sciences Consortium (MESC) funding initiative for Alabama State University (ASU): Studies of microbial communities affected by the Deepwater Horizon spill. \$60,000, 2010-2011 (Co-PI)

(d) Peer Reviewed Scientific Journals Publications (since 2008)

1. Sumit Arora, Nikhil Tyagi, Lilia Rusu, Rohan Palanki, **Komal Vig**, Shree R. Singh, Ajay P. Singh, Srinivas Palanki, Elliot J. Carter, Seema Singh. 2015. Silver nanoparticles protect human keratinocytes against UVB radiation-induced DNA damage and apoptosis: potential for prevention of skin carcinogenesis. *Nanomedicine: Nanotechnology, Biology, and Medicine* (In press). pii: S1549-9634(15)00077-5. doi: 10.1016/j.nano.2015.02.024.
2. Pooja M. Tiwari, Erdal Eroglu, Swapnil S. Bawage, **Komal Vig**, Michael E. Miller, Shreekumar Pillai, Vida A. Dennis, Shree R. Singh. 2014. Enhanced intracellular translocation and biodistribution of gold nanoparticles functionalized with a cell-penetrating peptide (VG-21) from vesicular stomatitis virus. *Biomaterials* 35(35):9484-94. doi: 10.1016/j.biomaterials.2014.07.032.

3. Erdal Eroglu, Pooja M Tiwari, Alain B Waffo, Michael E Miller, **Komal Vig**, et al. 2013. A nonviral pHEMA+chitosan nanosphere-mediated high-efficiency gene delivery system. *Intl. J. of Nanomedicine* 20: 1403-1415.
4. Pooja M Tiwari, Erdal Eroglu, S. Boyoglu-Barnum, **Komal Vig**, Shree R. Singh. 2013. Atomic force microscopic investigation of Respiratory syncytial virus infection in HEp-2 cells. *Journal of Microscopy*. 253(1):31-41. doi: 10.1111/jmi.12095.
5. Vardharajula S, Ali SZ, Tiwari PM, Eroğlu E, **Vig K**, Dennis VA, Singh SR. 2012. Functionalized carbon nanotubes: biomedical applications. *Intl. J. of Nanomedicine*. 7, 5361-5374.
6. Boyoglu-Barnum S., Subbarayan P., **Vig K.**, et al. 2012. Nano-encapsulated DNA and/or protein boost immunizations increase efficiency of DNA vaccine protection against RSV. *J. Nanomed. Nanotechnol.* 3(2). 1000132.
7. Tiwari, P.M., **Vig, K.**, Dennis, V.A., Singh, S.R. 2011. Functionalized Gold Nanoparticles and Their Biomedical Applications. *Nanomaterials*, 1, 31-63. doi:10.3390/nano1010031.
8. Cleon Barnett, Courtnee Bell, **Komal Vig**, A. C. Akpovo, Lewis Johnson, Shreekumar Pillai, Shree Singh. 2011. Development of a LIBS assay for the detection of Salmonella enterica serovar Typhimurium from food. *Anal Bioanal Chem* (DOI 10.1007/s00216-011-4844-3).
9. Vijaya Kumar Rangari, Mohammad M Ghouse, Shaik Jeelani, Angel Hundley, **Komal Vig**, Shree Ram Singh and Shreekumar Pillai. 2010. Synthesis of Ag/CNTs hybrid nanoparticles and fabrication of their nylon-6 polymer nanocomposite fibers for antimicrobial applications. *Nanotechnology* 21: 095102 (11pp). doi: 10.1088/0957-4484/21/9/095102
10. **Vig K**, N. Lewis, E.G. Moore, S. Pillai, V.A. Dennis, S.R. Singh. 2009. Secondary RNA structure and its role in RNA interference to silence the respiratory syncytial virus fusion protein gene. *Molecular Biotechnology* 43(3): 200-211.
11. Boyoglu S, **K. Vig**, S. Pillai, V. Rangari, V. Dennis, F. Khazi, S. R. Singh. 2009. Enhanced Delivery and Expression of a Nanoencapsulated DNA Vaccine Vector for RSV. *Nanomedicine: Nanotechnology, Biology and Medicine* 5 (4): 463-472.
12. Supriya Goswami, **Komal Vig**, Dileep K. Singh. 2009. Biodegradation of α and β endosulfan by *Aspergillus sydoni*. *Chemosphere* 75 (7): 883-888.
13. **Vig K**, R. Herzog, D. Martin, E.G. Moore, V.A. Dennis, S. Pillai, S.R. Singh. 2008. Recombinant adeno-associated virus as vaccine delivery vehicles. *Gene Ther Mol Biol*. 12: 277-292.
14. Lova Sun, Singh A., **Vig K.**, Pillai S. R., Singh S. R. 2008. Silver nanoparticles inhibit replication of Respiratory Syncytial Virus. *J. Biomed. Nanotech.* 4, 1-10.
15. **Vig K.**, Singh D.K., H.C. Agarwal, Dhawan A.K. and Dureja P. 2008. Soil microorganisms in soil of cotton fields sequentially treated with insecticides. *Ecotoxicology and Environmental Safety*, 69, Issue 2, 263-276.

(e) Book Chapters

- Komal Vig and Shivani Soni. 2014. "Metal and non-metal based Nanotherapeutics for Neurodegenerative Diseases." *Handbook of Metallonutraceuticals* (eds Pathak Y. V. & Lokhande J. N.). CRC Press.
- Komal Vig et al. 2013. "Nanomedicine: Future for Diagnostics and Therapeutics" in *Nanotechnology*, vol 7: Diagnostics and Therapeutics (eds Govil J. N., **Sinha S.** & **Navani N. K.**) Studium Press LLC, Houston, TX.

(f) Proceeding Publications (2009-present)

1. **Komal Vig**, K. Casey, P. M. Tiwari, M. Miller, R. Samant, S. R. Singh. 2013. Superparamagnetic Iron Oxide Nanoparticles as Drug Delivery Vehicles. *TechConnect*

World Conference and Expo 2013, to be held May 12-16, 2013, in National Harbor, Maryland.

2. Ejoywoke Dosunmu, Shreehumar Pillai, **Komal Vig**, Vida Dennis, Shree. R. Singh and Mamie Coats. 2013 Antibacterial effect of Silver carbon nanotube against Mucoid Strain of Pseudomonas aeruginosa. TechConnect World Conference and Expo 2013, to be held May 12-16, 2013, in National Harbor, Maryland.
3. **Komal Vig**, Pooja Tiwari, Arifa Parveen, Vijay Rangari, Shree R. Singh. 2012. Supermagnetic Iron Oxide Nanoparticles Toxicity to Mammalian Cells. NSTI Nanotechnology Conference and expo, June 18-21, Santa Clara, California.
4. **Vig K.**, S. Boyoglu, V. Rangari, S. Pillai, and S.R. Singh. 2009. Respiratory Syncytial Virus Inhibition by Gold and Titanium Nanoparticles. NSTI Nanotechnology Conference and Trade Show, May 3-7, 2009, Houston, TX.
5. Seyhan Boyoglu, **Komal Vig**, Adam Pfendt, Shreekumar Pillai, Gerold A. Willing, Shree R. Singh. 2009. Inhibitory Effects of Gold and Silver Nanoparticles on RSV Studied by Atomic Force Microscopy. NSTI Nanotechnology Conference and Trade Show, May 3-7, 2009, Houston, TX.
6. Lekha Adiani, Seyhan Boyoglu, **Komal Vig**, Shreekumar Pillai, Vijaya Rangari, Shree R. Singh. 2009. Silver Coated Carbon Nanotubes Inhibit RSV Infection. NSTI Nanotechnology Conference and Trade Show, May 3-7, 2009, Houston, TX.

(g) Panelist on Federal Government Funded Programs

- Panelist of Review Panels for EPA (Greater Research Opportunities Program 2010, 2011; 2010 SBIR Nanotechnology Program)
- Panelist of Review Panels for NSF (Graduate Research Fellowship Program 2011, 2012, 2013, 2014; REU Panel 2014)
- Panelist of 2013 NDSEG Evaluation Panel

(h) Editorial Board Member

- Journal of Nanogenomics and Nanomedicine (2012-present)
- Molecular Biotechnology Journal (2009-present)
- Life Sciences and Medicine Research Journal (2009-present)

(i) Journal Reviewer

- Toxicology and Applied Pharmacology.
- International Journal of Environmental Health Research
- Bulletin of Environmental Contamination and Toxicology
- The Open Environmental Pollution & Toxicology
- Journal of Hazardous Materials
- Chemosphere

(j) Synergistic Activities

- Judge and Reviewer for Annual Biomedical Research Conference for Minority Students (ABRCMS, 2010, 2011, 2012, 2013, 2014)
- Judge Southeastern Branch of American Society of Microbiology Meeting (2009, 2010)
- Judge Nanobiosummit Meeting 2013.
- Organizing Secretary 96th Southeastern Branch of American Society of Microbiology Meeting hosted by Alabama State University Nov 2010.
- Organizing Committee Member Nanobiosummit 2013

- Policy Committee Member American Society of Microbiology South Eastern Branch meeting at Alabama State University.
- STEM faculty under HBCU-UP program at Alabama State University
- Mentor under NIH-MBRS RISE program at Alabama State University

(k) Mentoring Activities

Undergraduate research advisor: 33

MS students: 8

Ph.D. students: 7

Postdoctoral /research staff: 5

(l) Collaborations and other Affiliations

Tuskegee University (Dr. Rangari; Dr Mahesh Houser); Auburn University (Drs. Miller, Ronald Arnold, David Allen, Martin Douglas); University of Alabama at Birmingham (Dr Yogesh Vohra); University of Florida (Dr. Herzog); Alabama State University (Drs Shree Singh, Vida Dennis, Shreekumar Pillai, Cleon Barnett, Alain Waffo, Derrick Dean)