

## Vikas Berry, PhD

Associate Professor and Department Head, Department of Chemical Engineering,  
University of Illinois at Chicago  
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### EDUCATION

Indian Institute of Technology-Delhi	Chemical Engineering	BS	1999
University of Kansas	Chemical Engineering	MS	2003
Virginia Tech	Chemical Engineering	Ph.D	2006

### APPOINTMENTS

Nov/16 -	Department Head, University of Illinois at Chicago, Chicago, IL
Aug/14 -	Associate Professor, University of Illinois at Chicago, Chicago, IL
Aug/15 - Nov/16	Interim Head, University of Illinois at Chicago, Chicago, IL
Nov/11 - Aug/14	William H. Honstead Professor of Chemical Engineering, Kansas State University
Jul/12 - Aug/14	Associate Professor, Kansas State University, Manhattan, KS
Jan/07 - Jun/12	Assistant Professor, Kansas State University, Manhattan, KS
Jan/03 - Dec/06	Graduate Research Assistant (PhD), Virginia Tech, Blacksburg, VA
Aug/00 - Dec/02	Graduate Research Assistant (MS), University of Kansas, Lawrence, KS
Aug/99 - Jul/00	Pharmaceutical Process Scientist, Cadila Pharmaceuticals, India

### PROFESSIONAL ACTIVITIES AND HONORS:

- (1) **NSF-CAREER Award – 2011**
- (2) **Endowed Chair: William H. Honstead Professorship (2011-2014)**
- (3) **Sigma Xi Outstanding Junior Scientist Award – 2010**
- (4) **Editorial Board Member for Nature Publication Group's journal: Scientific Reports**
- (5) **Plenary Lecture – Tsinghua University (China) – 2011**
- (6) **Keynote Lectures – ICREA – Graphene Biosensors (Spain - 2015); IMST (India, 2012)**
- (7) **Current Research Expenditure = \$150-200,000/Year**
- (8) **Research highlighted in Nature, Science News, Washington Post, Royal Society of Chemistry, Wall Street Journal, and Discover.**
- (9) **Associate Editor of Journal of Nanoscience Letters**
- (10) **Editorial Board member of Advanced Carbon**
- (11) **Guest Editor, Journal of Nanomaterials and Molecular Nanotechnology**
- (12) **Advisory Board of All Results Journal-Nano**
- (13) **Big-XII Fellow - 2009, Kansas State University**
- (14) **Faculty Development Award, Kansas State University, 2007, 2008, 2010**
- (15) **Omega Chi Epsilon Honor Society of Chemical Engineering, Member, 2007**
- (16) **Sigma Xi Scientific Research Society, Member, 2007**
- (17) **Empire Who's Who Honoree, 2006**
- (18) **Stroebel Scholarship Recipient, University of Kansas 2000-02**

### PUBLICATIONS (CITATIONS = 2780) \*Indicates corresponding authorship

1. Shikai Deng, Enlai Gao, Zhiping Xu, **Vikas Berry\***, "Adhesion Energy of MoS<sub>2</sub> Thin Films on Silicon-Based Substrates Determined via the Attributes of a Single MoS<sub>2</sub> Wrinkle", **ACS Applied Materials and Interfaces**, 9 (8), 7812-7818, 2017

2. Sanjay Behura, Kai-Chih Chang, Yu Wen, Rousan Debbarma, Phong Nguyen, Songwei Che, Shikai Deng, Michael Seacrist, and Vikas Berry\*, "WS<sub>2</sub>/Silicon Heterojunction Solar Cells", **IEEE Nanotechnology Magazine**, DOI: 10.1109/MNANO.2017.2676184, 2017
3. Vedhikha T. Parthasarathy, Rousan Debbarma, Sanjay Behura, Phong Nguyen, Yu Wen, Dylan Lynch, and Vikas Berry\*, "Facile Solution Processed MoS<sub>2</sub>-PEDOT:PSS Mixed Structure as Flexible Paper-Based Infra-Red Sensor", **Science Advances Today**, 2017
4. Bijentimala Keisham, Arron Cole, Phong Nguyen, Ankit Mehta, **Vikas Berry\***, "Cancer Cell Hyperactivity and Membrane Dipolarity Monitoring via Raman Mapping of Interfaced Graphene: Towards Non-Invasive Cancer Diagnostics", **ACS Applied Materials and Interfaces**, 8 (48), 32717, 2016
  - **Featured in AICHE, New Atlas, The Engineer, ScienceDaily, and others**
5. Shikai Deng, and **Vikas Berry\***, "Increased Hierarchical Wrinklons on Stiff Metal Thin Film on Liquid Meniscus", **ACS Applied Materials and Interfaces**, 8 (37), 24956-24961, 2016
6. Shikai Deng, Enlai Gao, Yanlei Wang, Soumyo Sen, Sreeprasad Theruvakkattil Sreenivasan, Sanjay Behura, Zhiping Xu, Petr Kral, and **Vikas Berry\***, "Confined, Oriented and Electrically Anisotropic Graphene Wrinkles on Bacteria", **ACS Nano**, 10 (9), 8403, 2016
  - **Featured in The Economist, The Engineer, ScienceDaily, Azo-Nano, Agetime, Physorg, NanoWerk etc**
7. Shikai Deng and **Vikas Berry\***, "Wrinkled, Rippled and Crumpled Graphene: An Overview of Formation Mechanism, Electronic Properties, and Applications", **Materials Today**, 19 (14), 197-212, 2016
8. Rousan Debbarma, Sanjay Behura, Phong Nguyen, T. S. Sreeprasad, and **Vikas Berry\***, "Electrical Transport and Network Percolation in Graphene and Boron Nitride Mixed-Platelet Structures", **ACS Applied Materials and Interfaces**, 8 (13), 8721-27, 2016
9. Sanjay Behura, Phong Nguyen, Songwei Che, Rousan Debbarma, and **Vikas Berry\***, "Large-Area, Transfer-Free, Oxide-Assisted, Synthesis of Hexagonal Boron Nitride Films and their Heterostructures with MoS<sub>2</sub> and WS<sub>2</sub>", **Journal of American Chemical Society**, 137 (40), 13060-13065, 2015
10. Sanjay Behura and **Vikas Berry\***, "Interfacial Non-Degenerate Doping of MoS<sub>2</sub> and other 2D Semiconductors", **ACS Nano**, 9 (3), 2227-2230, 2015
11. T. S. Sreeprasad, Phong Nguyen, Ahmed Alshogheathri, Luke Hibbeler, Fabian Martinez, Nolan McNeil and **Vikas Berry\***, "Graphene Cytobot: Single Spore Hydraulics for Electron-Tunneling Modulation between Quantum Dots for Biomechanical Applications", **Scientific Reports**, 5, 9138, 2015
  - **Featured in Wall Street Journal, Washington Post, IEEE-Spectrum, ScienceDaily, Science World Report, Physorg, NanoWerk etc**
12. P. Nguyen, D. Briggs, C. Fager and **V. Berry\***, "MoS<sub>2</sub> quantum dots interfaced with hydroscopic polyelectrolyte for water gated devices", **Science Letters**, 4, 118, 2015
13. D. Briggs, S. Deng, and **V. Berry\***, "Wrinkling Graphene with Bacteria and Functionalization of MoS<sub>2</sub> for Electronic Applications", **ECS Transactions**, 64 (6), 479-489, 2014
14. T. S. Sreeprasad, P. Nguyen, N. Kim, **V. Berry\***, "Controlled, Defect-Guided, Metal-Nanoparticle-Incorporation onto MoS<sub>2</sub> via Chemical and Microwave Routes: Electrical, Thermal, and Structural Properties", **Nano Letters**, 13 (9), 4434-4441, 2013 (Impact Factor = 13.02)
  - **Featured in IEEE-Spectrum, Kurweil, ScienceDaily, Science World Report, Physorg, NanoWerk etc**
15. T. S. Sreeprasad, A. A. Rodriguez, J. Colston, A. Graham, E. Shishkin, V. Pallem, **V. Berry\***, "Electron-Tunneling Modulation in Percolating-Network of Graphene Quantum Dots: Fabrication, Phenomenological Understanding, and Humidity/Pressure Sensing Applications", **Nano Letters**, 13 (4), 1757-1763, 2013 (Impact Factor = 13.02)

- **Featured article in ScienceDaily, Physorg, eScienceNews, NanoWerk, Zee-News, etc**
16. **V. Berry\***, "Impermeability of Graphene and its Applications", **Carbon**, 62, 1–10, **2013** (Impact Factor = 5.87) **> 100 Citations**
  17. P. Nguyen, J. Li, T. S. Sreeprasad, K. Jasuja, N. Mohanty, M. Ikenberry, K. Hohn, V. Shenoy and **V. Berry\***, " Covalent Functionalization of Dipole-Modulating Molecules on Trilayer Graphene: An Avenue for Graphene-Interfaced Molecular Machines", **Small**, 9, 3823-3828, **2013** (Impact Factor = 7.82)
  18. T. S. Sreeprasad and **V. Berry\***, "How do the Electrical Properties of Graphene change with its Functionalization?", **Small**, 9, 341-350, **2013** (Impact Factor = 7.82)
  19. N. Mohanty, D. Moore, Z. Xu, T. S. Sreeprasad, A. Nagaraja, A. A. Rodriguez and **V. Berry\***, "Nanotomy Based Production of Transferrable and Dispersible Graphene-Nanostructures of Controlled Shape and Size", **Nature Communications**, 3, Article number: 844, **2012** (Impact Factor = 10.01)
    - **Featured article in Materials@Nature, EE-Times, Phys-Org, The Engineer and AzoNano, amongst other places.**
  20. B. Kollbe Ahn, J. Sung, Y. Li, N. Kim, M. Ikenberry, K. Hohn, N. Mohanty, P. Nguyen, T. S. Sreeprasad, S. Kraft, **V. Berry\***, and X. S. Sun\*, "Synthesis and characterization of amphiphilic reduced graphene oxide with epoxidized methyl oleate", **Advanced Materials**, 24, 16, 2123-2129, **2012** (Impact Factor = 14.83)
  21. P. Nguyen and **V. Berry\***, "Biological Interfaces with Graphene: Opportunities and Challenges", **Journal of Physical Chemistry Letters**, 3, 1024-1029, **2012** (Impact Factor = 6.58)
  22. N. Mohanty, M. Fahrenholz, A. Nagaraja, D. Boyle, and **V. Berry\***, "Graphenic Encasement of Bacteria", **Nano Letters**, 11 (3), 1270–75, **2011** (Impact Factor = 13.02)
    - **Featured in Nature and Microscopy Today, amongst other places**
  23. V. Berry, and R. F. Saraf, "Modulation of Electron-Tunneling in Nanoparticle Array by Sound Wave: An Avenue to High Speed, High-Sensitivity Sensors", **Small**, 7, 17, 2485-90, **2011** (Impact Factor = 7.82)
  24. S. Park, N. Mohanty, J. W. Suk, A. Nagaraja, J. An, R. D. Piner, W. Cai, **V. Berry\*** and R. S. Ruoff\*, "Biocompatible, robust free-standing paper composed of TWEEN/graphene composite", **Advanced Materials**, 22 (15) 1736-40, **2010** (Impact Factor = 14.83) **> 250 Citations**
  25. K. Jasuja, J. Linn, S. Melton, and **V. Berry\***, "Microwave-Reduced Uncapped Metal Nanoparticles on Graphene: Tuning Catalytic, Electrical and Raman Properties", **Journal of Physical Chemistry Letters**, 1, 1853-60, **2010** (Impact Factor = 6.58) **> 100 Citations**
    - **Amongst Top 10 most-cited papers in JPCL. Featured in Science Daily, etc.**
  26. K. Jasuja and **V. Berry\***, "Implantation and Growth of Dendritic Gold Nanostructures on Graphene Derivatives: Electrical-Property-Tailoring and Raman-Enhancement", **ACS-Nano**, 3 (8), 2358-2366, **2009**. (Impact Factor = 12.06) **> 250 Citations**
  27. N. Mohanty, A. Nagaraja, J. Armesto and **V. Berry\***, "High-Throughput, Ultrafast Synthesis of Solution Dispersed Graphene via Hydride Chemistry", **Small**, 6 (2) 226-31, **2009** (Impact Factor = 7.82)
    - **Featured in ScienceDaily, Physorg, Nanotech-Now, World-Gold-Council, etc**
  28. N. Mohanty and **V. Berry\***, "Graphene-based Single-Bacterium Resolution Biodevice and DNA-Transistor - Interfacing Graphene-Derivatives with Nano and Micro Scale Biocomponents", **Nano Letters**, 8, 4469-4476, **2008** (Impact Factor = 13.02) **> 800 Citations**
    - **Amongst Top 20 most cited papers in Nano Letters from 2008-2011; Featured in ScienceDaily, Nanotechnow, Physorg, ScienceCentric, Reuters, BioMedicine, eScienceNews, and others**
  29. K. Jasuja, A. Thompson, and **V. Berry\***, "Reversibly Compressible and Stretchable 'Spring-like' Polymeric Nano-Junctions between Metal Nanoparticles", **Small**, 4, 2181-2886, **2008** (Impact Factor = 7.82)

30. K. Jasuja and V. Berry\*, "Incorporating Azo-group-functionalized Molecular Junctions between Metal Nanoparticles to produce High-rectification-memory Nanodevices", **MRS proceedings, 2008**
31. V. Berry, and R. F. Saraf\*, "Self-Assembly of Nanoparticles on Live Bacterium: An Avenue to Fabricate Electronic Devices", **Angewandte Chemie International Edition**, 44, 6668-6673, **2005** (Selected as Hot Paper) (Impact Factor = 13.73)
  - o **Featured in Nature News, Science News, MRS Bulletin, Royal Society of Chemistry etc.**
32. V. Berry, A. Gole, S. Kundu, C. Murphy, and R. F. Saraf\*, "Deposition of CTAB Terminated Nanorods on Bacteria to Form Highly Conducting Hybrid System", **Journal of the American Chemical Society**, 127, 17600-17601, **2005** (Impact Factor = 10.68)
33. Agarwal, V. Berry, Alapati, and K. J. Nordheden\*, "Characterization of SiCl<sub>4</sub>/N<sub>2</sub> Plasmas", **Journal of Electrochemical Society**, 152, 210-212, **2005** (Impact Factor = 2.6)
34. V. Berry, S. Rangaswamy, and R. F. Saraf, "Highly Selective, Electrically Conductive Monolayer of Nanoparticles on Live Bacteria", **Nano Letters**, 4, 939-942, **2004** (Impact Factor = 13.02)
35. K. Jasuja, K. Ayinde, C. Davis, M. Ikenberry, D. Moore, K. Hohn and V. Berry\*, "Exfoliating Large-Area, Ultrathin Protonated Sheets of Boron Nitride", submitted to Nature Communications
36. Sanjay Behura, Phong Nguyen, Rousan Debbarma, Songwei Che, Michael Seacrist, and Vikas Berry\*, "Surface-Interaction Guided, Direct Growth of Large-Area Hexagonal Boron Nitride for Graphene/h-BN Heterostructure Electronics", Submitted Nano Letters (2016)

## BOOK CHAPTERS

37. *Biosensors Based on Nanomaterials and Nanodevices*: Chapter: "Bioelectronics on Graphene" by Vikas Berry; **CRC Press - Taylor and Francis Publication**, 2013.
38. *Chemistry of Graphene*: Chapter: 'Bioelectronic Devices from Graphene' by Vikas Berry; **Pan Stanford Publishing** (to be published in 2013)

## PATENTS AND DISCLOSURES

39. "Production of Graphene Nanoribbons and Quantum Dots with Controlled Dimensions and Crystallographic Orientation", Vikas Berry, Nihar Mohanty and David Moore, **US Patent US9272911 (2016)**
40. "Direct and sequential formation of monolayers of boron nitride and graphene on substrates", Michael R. Seacrist, Vikas Berry and Phong T. Nguyen, **US Patent US9029228 (2015)**
41. "Direct formation of graphene on semiconductor substrates", Michael R. Seacrist and Vikas Berry, **Patent Number US8884310 (2014)**
42. "Direct Formation of Hexagonal Boron Nitride on Silicon-Based Dielectrics", M.R. Seacrist, V. Berry, S. Behura, P. Nguyen, **US Patent Sr. No. 62/335,149 (2016)**
43. "Epitaxial Growth of Defect-free, Wafer-scale Single-Layer Graphene on Thin Films of Cobalt", M.R. Seacrist, V. Berry, S. Behura, P. Nguyen, **US Patent Sr. No. 62/235, 800 (2015)**
44. "Fabrication of Ultra Long Necklace of Nanoparticles", Ravi Saraf, S. Niu, V. Berry, V. Maheshwari, **Patent Number: US7749561 (2010)**
45. "Live Bioelectronic cell gated transistor", R. F. Saraf, V. Berry, M. Inan, S. Niu (**USPTO Application # 20100243984**) (2010)
46. "Highly resolved, low noise, room-temperature coulomb staircase and blockade up to 2.2V in isolated 50 micron long one dimensional necklace of 10 nm Au particles", R. F. Saraf, V. Berry, S. Niu (**US Patent application number: US 11/477,263**)
47. "Graphene-Based Single-Bacterium Resolution Biodevice and DNA Transistor", Vikas Berry and Nihar

Mohanty (KSU Disclosure Ref. No. 09-22)  
8 current disclosures at UIC.

## FUNDING SUPPORT FOR RESEARCH

**TOTAL = \$ 2.2 Million**    **As Sole PI = \$1.67 Million**                      **Expenditure = \$350,000/year**

1. PI "ICORP: Large-Area "η6-Functionalized Graphene Sheets with Preserved Lattice for Semiconductor Applications and Industry".  
**NSF; Amount \$ 50,000;** Start Date: 11/15/14; Period = 0.5 Year
2. PI "Growth of Large-Area Graphene-BN and Transition Metal Dichalcogenide Sandwich Systems and Detailed Characterization of their Structural, Electrical and Interfacial Properties".  
**SunEdison Semiconductors Inc; Amount \$ 210,750;** Start Date: 09/01/14; Period = 2 Year
3. PI "Growth and Transfer of Large-Area Graphene on Silicon and Silica Substrates and its Surface Engineering".  
**MEMC Inc; Amount \$ 40,000;** Start Date: 04/01/14; Period = 3 Months
4. PI "Detection of Cancer Market with Graphene Sensors".  
**Terry C. Johnson Center for Basic Cancer Research; Amount \$ 25,500;** Start Date: 05/01/13; Period = 1 Year
5. PI "Tapered Graphene Nanoribbons of Controlled Width and Tapering Angle: Carrier-Tunable Diode Transistor".  
**Office of Naval Research; Amount \$ 300,000;** Start Date: 07/01/11; Period = 3 Year
6. PI "CAREER: Detailed Characterization of Graphene Quantum Dots of Controlled Size, Shape and Chemistry".  
**NSF; Amount \$ 400,000;** Start Date: 02/01/11; Period = 5 Year
7. PI "Growth and Transfer of Large-Area Graphene on Silicon and Silica Substrates and its Surface Engineering".  
**MEMC Inc; Amount \$ 237,913;** Start Date: 04/01/11; Period = 3 Year
8. PI "Detailed Surface Engineering and Electrical Characterization of pi-Functionalized Graphene Sheets and Ribbons with Preserved Lattice and Electronic Characteristics".  
**NSF; Amount \$ 301,704;** Start Date: 08/15/10; Period = 3 Year
9. PI "EAGER: Graphene-Nanoribbons of Controlled Width and Crystallographic-Orientation".  
**NSF; Amount \$ 76,000;** Start Date: 08/01/09; Period = 1 Year
10. PI "Detection of Cancer Market with Graphene Sensors".  
**Terry C. Johnson Center for Basic Cancer Research; Amount \$ 25,500;** Start Date: 04/01/10; Period = 1 Year
11. Co-PI, "MRI: Acquisition of a Field Emission Scanning Electron Microscope for Kansas State University", PI: James Edgar, Co-PIs: Christopher Sorensen, and Jun Li.  
**NSF; Amount: \$ 518,928;** Start Date: 09/01/09; Period = 3 years
12. PI "Study of Graphene Nanoribbon's Structural Properties using STM: Determining Edge-Crystallographic-orientation and defects"  
**Brookhaven National Laboratory; Equipment Usage Time Granted on STM;** Period = 3 Years
13. PI "Big-XII Fellowship: Collaboration Research in Graphene Biointerfacing"

**KSU; Amount \$ 3,000; Start Date: 05/01/09; Period = 1 Year**

14. PI "Presenting at Trends in Nanotechnology - 2008"  
**KSU: Presidential Faculty Development Award; \$ 2,000; 2008**
15. PI "*Recent Advances in Graphene and Related Materials conference held in Singapore*"  
**KSU: Presidential Faculty Development Award; \$ 2,500; 2010**

## PRESENTATIONS

1. Nguyen, Phong, Sanjay Behura, Vikas Berry, and Mike Seacrist, "Direct Formation of Monolayer Graphene on Si-Based Dielectrics", **Argonne National Laboratory**, Chicago, October 8, 2015
2. Deng, Shikai, Enlai Gao, Yanlei Wang, Soumyo Sen, T. S. Sreeprasad, Sanjay Behura, Petr Král, Zhiping Xu, and Vikas Berry, "Bio-Interfaced Wrinkling of Graphene Materials: Structure and Electrical Properties", **Argonne National Laboratory**, Chicago, October 8, 2015
3. Behura, Sanjay, Phong Nguyen, Songwei Che, Rousan Debbarma, and Vikas Berry, "Direct Synthesis of Hexagonal Boron Nitride Films and Their Heterostructures with Transition Metal Dichalcogenides", **Argonne National Laboratory**, Chicago, October 8, 2015
4. Sanjay Behura, Kai-Chih Chang, Rousan Debbarma, Phong Nguyen, Michael R. Seacrist, and Vikas Berry, "Photovoltaic Characteristics WS<sub>2</sub>/p-Si Heterojunction Developed by Chemical Vapor Deposition", **MRS Fall Meeting 2015**, Nov. 29-Dec. 4, 2015, Boston, MA, USA.
5. Songwei Che, Phong Nguyen, Sanjay Behura, Kabeer Jasuja, T. S. Sreeprasad, and Vikas Berry, "Vapor-phase eta-6 functionalization of graphene with retained charge carrier mobility", **MRS Fall Meeting 2015**, Nov. 29-Dec. 4, 2015, Boston, MA, USA.
6. S. Behura, P. Nguyen, M. R. Seacrist, V. Berry, "High-quality, large-area, epitaxial growth of single-layer graphene on thin films of cobalt," **MRS Fall Meeting 2015**, Nov. 29-Dec. 4, 2015, Boston, MA, USA.
7. Vikas Berry, "Structural and Chemical Manipulation of 2D Nanomaterials: Graphene, MoS<sub>2</sub>, Boron Nitride" **Argonne National Laboratory**, Chicago, April 6, 2016
8. Vikas Berry and Sanjay Behura, "*Development of 2D nanomaterials and Heterostructures for Nano and Opto-Electronics*", SunEdison Semiconductors, St. Luis, Nov 2015
9. Shikai Deng, T. S. Sreeprasad, and Vikas Berry, "*Electrical Properties of Controlled, Longitudinal Wrinkles on Graphene Produced Via Bacterial-Scaffold Shrinkage*", **Electrochemical Society**, Chicago, May 2015
10. Songwei Che, T. S. Sreeprasad, Phong Nguyen, and Vikas Berry, "*Eta6 chemical Modification of Epitaxial Graphene: An Avenue for Non Destructive Surface Functionalization and Atomic Layer Deposition*", **Electrochemical Society**, Chicago, May 2015
11. Sanjay Behura, Rousan Debbarma, Phong Nguyen, T. S. Sreeprasad, and Vikas Berry, "*Chemically-Derived Graphene and Boron Nitride Heterostructures for Optoelectronic Applications*", **Electrochemical Society**, Chicago, May 2015
12. Donovan Briggs, Phong Nguyen, Cody Fager, T. S. Sreeprasad, and Vikas Berry, "*Carrier Doping of Few-Layer MoS<sub>2</sub> with Ionic Polymers and MoS<sub>2</sub> Quantum Dots with Atmospheric Water*", **Electrochemical Society**, Chicago, May 2015
13. Vedhikha Tiruparkadal Parthasarathy, and Vikas Berry, "*MoS<sub>2</sub> Devices Using Pencil Circuits*", **Electrochemical Society**, Chicago, May 2015
14. **Keynote Talk**, Vikas Berry, "Graphene Based Biosensors", **ICREA Workshop on Graphene Nanobiosensors**, Barcelona, Spain May 2015
15. **Invited Talk**, Vikas Berry, "Graphene Nanotechnologies", **Georgia Tech**, Atlanta, April 2015
16. **Invited Talk**, Vikas Berry, "Graphene Nanotechnologies", **Illinois Institute of Technology**, Chicago, January 2015

17. **Invited Talk**, Vikas Berry, "The Fascinating World of 2D Array of Atoms: Graphene and MoS<sub>2</sub> based Electronics", **BioEngineering at University of Illinois at Chicago**, Chicago, Jan 2015
18. **Invited Talk**, Vikas Berry, "Wrinkling Graphene with Bacteria and Functionalization of MoS<sub>2</sub> for Electronic Applications", **ECS**, Cancun, September 2014
19. **Invited Talk**, Vikas Berry, "Arrays of Graphene Quantum Dots, Fabrication of Tapered Graphene Nanoribbons and Functionalization of 2D Nanomaterials for Electronic Applications", **Materials Research Society**, San Francisco, Spring 2014
20. Donovan Briggs and Vikas Berry, "Carrier Doping of Few-Layer MoS<sub>2</sub> with Ionic Polymers", **Materials Research Society**, San Francisco, Spring 2014
21. T. S. Sreeprasad, Phong Nguyen, Namhoon Kim, and Vikas Berry, "Controlled, Defect-Guided, Metal-Nanoparticle Incorporation onto MoS<sub>2</sub> via Chemical and Microwave Routes: Electrical, Thermal, and Structural Properties", **Materials Research Society**, San Francisco, Spring 2014
22. T. S. Sreeprasad, Phong Nguyen, Luke Hibbeler, Ahmed Alshogheathri, and Vikas Berry\*, "Graphene Quantum Dot Based Bio-Electronic Device Operated by Bacterial Mechanics: Avenue for Bio-Hybrid Sensors", **Materials Research Society**, San Francisco, Spring 2014
23. Shikai Deng, T. S. Sreeprasad and Vikas Berry\*, "Electrical Control via Precise Wrinkling of Graphene with Bacterial Cells", **Materials Research Society**, San Francisco, Spring 2014
24. **Invited Talk**, Vikas Berry, "Graphene Quantum Dots and MoS<sub>2</sub> Functionalization", **ICONSAT Conference**, Chandigarh, India, 2014
25. **Invited Talk**, Vikas Berry, "Graphene, a 2D Network of Carbon Atoms: Properties and Applications", **IISc Bangalore**, Bangalore, India, 2014
26. Vikas Berry, "Graphene, a 2D Network of Carbon Atoms: Properties and Applications of Graphene Quantum Materials and Graphene Encased Cells", **Graphene Brazil – 2013 Conference**, Buzius, Brazil, September 2013
27. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **University of Illinois at Chicago**, Chicago, IL, May 2013
28. **Invited Talk**, Vikas Berry, "Graphene Encasement for Retaining the Wet-Behavior of Living Cells and Solution-Dispersed Nanomaterials", **American Chemical Society**, New Orleans, April 2013
29. **Invited Talk**, Vikas Berry, "Graphene Quantum Dots and Nanoribbons of Controlled Structural, Electrical and Optical Properties; and Graphenic Molecular Machines", **American Chemical Society**, New Orleans, April 2013
30. T. S. Sreeprasad, Phong Nguyen, Kabeer Jasuja and Vikas Berry, "η<sub>6</sub> Chemical Modification of Epitaxial Graphene: An Avenue for Non Destructive Surface Functionalization and Atomic Layer Deposition", **Materials Research Society**, Mar 2013
31. Vasanta Pallem, Nihar Mohanty, and Vikas Berry, "Impermeable Graphene Encasements for Liquids, Living Cells and Solution-dispersed Nanomaterials", **Materials Research Society**, Mar 2013
32. T. S. Sreeprasad, Alfredo A. Rodriguez, Jonathan Colston, Augustus Graham, Evgeniy Shishkin, Vasanta Pallem, and Vikas Berry, "Oxidative Cutting of Graphene Nanoribbons into Quantum Dots and Electron-tunneling Modulation between Graphene Quantum Dots: Avenue for Novel Sensing Devices", **Materials Research Society**, Mar 2013
33. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **Tufts University**, Medford, MA, Feb 2013
34. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **Texas A&M**, College Station, TX, Feb 2013
35. **Invited Talk**, Vikas Berry, "Graphene-Based Sensors for Molecular-Mechanics", **University of Pittsburgh**, Pittsburgh, PA, Jan 2013
36. **Invited Talk**, Vikas Berry, "Graphene Sensors and Quantum Materials", **University of Kansas**, Lawrence, Sep 2012

37. **Invited Talk**, Vikas Berry, "Nanotomy of Graphite to Produce Graphene Nanostructures of Controlled Structure and Transport Properties; and Graphene-Based Sensors for Molecular-Mechanics", **University of Houston**, Houston, TX, Aug 2012
38. Vikas Berry, "eta-6 Chemical Modification of Graphene", **NSF-CMMI-Awardee Conference**, Boston, July 2012
39. **Invited Talk**, Vikas Berry, "Transferrable and Dispersible Graphene Nanostructures of Controlled Structural, Electrical and Optical Properties", **ECS**, Seattle, May 2012
40. **Invited Talk**, Vikas Berry, "Large-Scale Production of Transferrable and Dispersible Graphene Nanostructures of Controlled Structural, Electrical and Optical Properties; and Principles Defining Graphene-based Sensors eversible", **MRS**, San Francisco, Apr 2012
41. Phong Nguyen, T. S. Sreeprasad, Nihar Mohanty, Kabeer Jasuja, and Vikas Berry, "Reversible and Robust Carrier Doping in Graphene *via* Mechanical Actuation of Tethered Azobenzene", **APS**, Boston, Mar 2012
42. T. S. Sreeprasad, Nihar Mohanty, David Moore, Zhiping Xu, Ashvin Nagaraja, Alfredo A. Rodriguez, and Vikas Berry, "Lattice-Nanotomy for Large-Scale Production of Transferrable and Dispersible Graphene-Nanostructures of Controlled Shape and Size", **APS**, Boston, Mar 2012
43. T. S. Sreeprasad, Phong Nguyen, Joshua Podrebarac, Jenae Tate, and Vikas Berry, "Impermeable ``single-monolayer" Graphenic encasement of bacteria for high vacuum Transmission electron microscopy", **APS**, Boston, Mar 2012
44. T. S. Sreeprasad, Phong Nguyen, and Vikas Berry, "A study on tapered graphene nanoribbons with controlled angle: Fabrication and conductivity studies", **APS**, Boston, Mar 2012
45. Phong Nguyen, T. S. Sreeprasad, Kabeer Jasuja, and Vikas Berry, "eta-6 Chemical Modification of Epitaxial Graphene: An Avenue for Non Destructive Surface Functionalization and Atomic Layer Deposition", **APS**, Boston, Mar 2012
46. **Invited Talk**, Vikas Berry, "Graphene Science and Technology", **Kansas State University**, Course Lecture = DEN 399, February 2012
47. **Invited Talk**, Vikas Berry, "Principles Defining the Operation of a Novel Graphene-Based Molecular-Machine", **University of Arkansas**, Fayetteville, AR February 2012
48. Vikas Berry, "*Tapered* Graphene Nanoribbons of Controlled Tapering Angle: Structurally Tuning the Charge-Carrier Properties", **Office of Naval Research**, Monterey, CA December 2011
49. **Plenary Lecture**, Vikas Berry, "Impact of Deformation on Properties and Devices of Graphene", **Tsinghua University, Beijing, China**, Sep 2011
50. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **Indian Institute of Technology**, New Delhi, India, Sep 2011
51. Kabeer Jasuja, Kayum Ayinde, Christina Davis, Myles Ikenberry, Keith L. Hohn and Vikas Berry, "Synthesis of Solvent Dispersed Ultrathin Sheets of Boron Nitride" **AICHE**, Minneapolis, Oct 2011
52. Nihar Mohanty, Ashvin Nagaraja, Monica Fahrenholtz, Daniel L. Boyle and Vikas Berry, "Impermeable Graphenic Wrapping of Bacteria" **AICHE**, Minneapolis, Oct 2011
53. Phong Nguyen, Kabeer Jasuja, Mohanty Nihar and Vikas Berry, "Detecting Molecular Motion On Graphene: An Opto-Electromechanical Logic Device" **AICHE**, Minneapolis, Oct 2011
54. Nihar Mohanty and Vikas Berry, "High-Throughput Production of Graphene Nanostructures (nanoribbons and quantum dots) with Controlled Dimensions and Smooth Edge Terminations" **AICHE**, Minneapolis, Oct 2011
55. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **MEMC Inc**, Saint Louis, July 2011
56. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **NSF GK-12 Talk**, Manhattan, KS, June 2011
57. Phong Nguyen, Kabeer Jasuja, Nihar Mohanty, and Vikas Berry, "Molecular Mechanics on Graphene



- Surface and its Detection", **APS**, Dallas, Mar 2011
58. Vikas Berry, Nihar Mohanty, David Moore, and Ashvin Nagaraja, "Large-scale production of Graphene Nanoribbons with controlled width: Electrical Properties of Graphene Nanoribbon Films", **APS**, Dallas, Mar 2011
  59. **Invited Talk**, Vikas Berry, "Graphene Research", **Chemistry Graduate Seminar**, Chemistry Department, Kansas State University, Feb 2011
  60. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **UNL Seminar Series - Department of Engineering Mechanics**, University of Nebraska. Lincoln, NE, Feb 2011
  61. **Invited Talk**, Vikas Berry, "Graphene: Properties, Phenomena and Applications of a 2D Network of Carbon Atoms", **Physics Colloquia Series**, Physics Department, Kansas State University, Nov 2010 (Invited)
  62. Kabeer Jasuja, Nathan Lechtenberg and Vikas Berry, "*Defect-Free Functionalization of Graphene for Building Ultrasensitive Graphene Biochemical Sensors*", **AICHE**, Salt Lake City, UT, November 2010
  63. Kabeer Jasuja, Nihar Mohanty and Vikas Berry, "*Detection of Molecular Mechanics On Graphene Surface: An Electromechanical Logic Device*", **AICHE**, Salt Lake City, UT, November 2010
  64. Kabeer Jasuja, Josh Linn and Vikas Berry, "*Microwave-Activated Functionalization of Bare-Surfaced Metal Nanoparticles On Graphene Derivatives: Avenue for Carrier Manipulation, Enhanced Catalytic Activity and Raman Amplification*", **AICHE**, Salt Lake City, UT, November 2010
  65. Nihar Mohanty, Ashvin Nagaraja, Monica Frey, Daniel L. Boyle and Vikas Berry, "*Award Submission: Live Bacterium Wrapping with Graphene Peptide Nano-Swaddler: a New Paradigm for Electron Microscopy and Raman Enhancement*", **AICHE**, Salt Lake City, UT, November 2010
  66. Vikas Berry, Kabeer Jasuja, Nihar Mohanty, Ashvin Nagaraja, and Jose Armesto, " *$\eta$ 6 Chemical Modification of Epitaxial Graphene: A New Chemical Route for Atomic Layer Deposition and Fabricating Ultrasensitive Biological Sensors*", **AICHE**, Salt Lake City, UT, November 2010
  67. Nihar Mohanty, Ashvin Nagaraja, Monica Frey, Daniel L. Boyle and Vikas Berry, "*Live Bacterium Wrapping with Graphene Peptide Nano-Swaddler: a New Paradigm for Electron Microscopy and Raman Enhancement*", **AICHE**, Salt Lake City, UT, November 2010
  68. **Invited Talk**, Vikas Berry, "*Chemical and Structural Modification of Graphene for Semiconducting and Bioelectronic Applications*", **Recent Advances in Graphene and Related Materials**, Singapore, Aug 2010
  69. Kabeer Jasuja, Vikas Berry, "*Bio-chemical functionalization of graphene for cancer cell detection*", **Annual Biochemical Engineering Symposium**, Manhattan, KS, Apr 2010
  70. Nihar Mohanty, Ashvin Nagaraja, Monica Frey, Vikas Berry, "*Live Bacterium Wrapping with Graphene Peptide Nano-Swaddler: a New Paradigm for Electron Microscopy and Raman Enhancement*", **Annual Biochemical Engineering Symposium**, Manhattan, KS, Apr 2010
  71. Nihar Mohanty, Angela D. Adams, Rebecca Horvat, Duy H. Hua, Vikas Berry, "*Ultrafast, Label-free detection of Pathogenic Bacteria via Peptide-modified-Graphene bio-sensor*", **Annual Biochemical Engineering Symposium**, Manhattan, KS, Apr 2010
  72. Vikas Berry, Kabeer Jasuja, Joshua Linn, " *$\pi$ - $\pi$  Functionalization of Graphene: Avenue for building Ultrasensitive Graphene BioSensors*", **APS**, Portland, OR, March 2010
  73. Vikas Berry, Nihar Mohanty, Ashvin Nagaraja, Monica Frey, "*Bacterium Wrapping with Graphene for Non-destructive TEM Imaging and Raman Enhancement*", **APS**, Portland, OR, March 2010
  74. Vikas Berry, Nihar Mohanty, Ashvin Nagaraja, Jose Armesto, "*High-Throughput, Ultrafast Synthesis of Solution Dispersed Graphene via a Facile Hydride Chemistry*", **APS**, Portland, OR, March 2010
  75. Vikas Berry, Kabeer Jasuja, Nihar Mohanty, "*Detection of Molecular Mechanics on Graphene surface: An Electromechanical Logic Device*", **APS**, Portland, OR, March 2010
  76. Vikas Berry, Kabeer Jasuja, "*Real-Time Study of Stretching of Molecular Junctions between Nanoparticles:*

- An Avenue to Build Molecular-Electromechanical Devices*", **AICHE**, Nashville, TN, November 2009
77. Vikas Berry, Nihar Mohanty, Kabeer Jasuja, "Reversible, Ultrafast Switching of Azo-Benzene-Tethered On Graphene FETs", **AICHE**, Nashville, TN, November 2009
  78. Vikas Berry, Ashvin Nagaraja, Kabeer Jasuja, Nihar Mohanty, "Ultrafast, Highly Sensitive Label-Free Pathogen Detection Via Chemically Modified Graphene (CMG) Sensors" **AICHE**, Nashville, TN, November 2009
  79. Vikas Berry, Nihar Mohanty, Ashvin Nagaraja, and Jose Armesto, "High-Throughput, Ultrafast Synthesis of Solution Dispersed High-Quality Graphene via a Novel Hydride Chemistry: Raman Spectra and Electrical Gating", **AICHE**, Nashville, TN, November 2009
  80. Vikas Berry, Kabeer Jasuja, "Novel Chemical Schemes to Functionalize Graphene without Introducing Defects: Avenue for Building Sensitive Graphene Sensors", **AICHE**, Nashville, TN, November 2009
  81. Vikas Berry, Kabeer Jasuja, "Dendritic (Snow-Flake-Shaped) Gold-Nanostructures Templated On Graphene: Tuning Electrical Properties and Raman Spectra", **AICHE**, Nashville, TN, November 2009
  82. Vikas Berry, Kabeer Jasuja, Josh Linn, Steven Melton, "Microwave Induced in-Situ Deposition of Gold and Silver Nanostructures On Graphene: Avenue to Build Graphene-Metal Interfaces", **AICHE**, Nashville, TN, November 2009
  83. Vikas Berry, Nihar Mohanty, Ashvin Nagaraja, Monica Frey, "Wrapping of a Single Live Bacterium by Biochemically Modified Graphene (BMG) Sheets: Avenues to Build Nano-Biomachines", **AICHE**, Nashville, TN, November 2009
  84. **Invited Talk**, Vikas Berry, "On-Surface Biomodification and Molecular-interfacing of Graphene: Study of its Electrical and Structural Properties", **BACON**, Boston University, Boston, MA, June 2009
  85. Vikas Berry and Nihar Mohanty, "Effect of Single Bacterium Cell and DNA Attachment on the Electrical Properties of Chemically Modified Graphene Sheets", **APS**, Pittsburgh, PA, March 2009
  86. Vikas Berry and Kabeer Jasuja, "Microwave induced in-situ deposition of Gold and Silver nanoparticles on chemically modified sheets of graphene: Avenue to build Graphene-metal interface", **APS**, Pittsburgh, PA, March 2009
  87. Vikas Berry and Kabeer Jasuja, "Snow flake shaped gold nanostructures templated on graphene: an avenue to fabricate novel nano electronic devices", **APS**, Pittsburgh, PA, March 2009
  88. Vikas Berry and Kabeer Jasuja, "'Spring-Like' and Photo-actuated Junctions Between Nanoparticles", **APS**, Pittsburgh, PA, March 2009
  89. Vikas Berry and Nihar Mohanty, "Wrapping of a single bacterium with Functionalized - Chemically Modified Graphene (FCMG) sheets via highly specific protein-cell wall interaction", **APS**, Pittsburgh, PA, March 2009
  90. Vikas Berry, Nihar Mohanty, Kabeer Jasuja, Ashvin Nagaraja and Jose Armesto, "Graphene Modification to produce novel structures and devices", **Center of Biobased Polymers by Design - KSU**, January 2009
  91. Vikas Berry and Nihar Mohanty, "Attachment of Single Bacterium Cell, DNA and Single Molecules on Chemically Modified Graphene Sheets: Avenue to Build Smart Electrochemical Circuitry", **AICHE**, Philadelphia, PA, November 2008
  92. Vikas Berry and Kabeer Jasuja, "'Spring-Like' and Photomechanical Junctions Between Nanoparticles: An Avenue to Power Molecular-Machines by Compression Energy", **AICHE**, Philadelphia, PA, November 2008
  93. Vikas Berry and Kabeer Jasuja, "Spring-like molecular Junctions: An Avenue to Store Energy in Molecules to Power Molecular Machines", **Trends in Nanotechnology**, Oviedo, Spain, September 2008
  94. **Invited Talk**, Vikas Berry, Nihar Mohanty and Kabeer Jasuja, "Attachment of Single Molecules and biological components on Modified Graphene Sheets and Study of its Electronic Properties: Building Highly Sensitive Biomolecular Devices", **Indian Institute of Science**, Bangalore, India, June 2008
  95. Vikas Berry, Kabeer Jasuja, Nihar Mohanty, Arthur Thompson and Mark Battig, "Functionalized and Mechanical Molecular Junctions between Metal Nanoparticles", **Material Research Society**, San Francisco, CA, April 2008
  96. Kabeer Jasuja and Vikas Berry, "Photo-induced Molecular Mechanics to Produce Reversible Mechanical

- Motion of Nanocomponents: Avenue to Build Nanomachines*", **Biochemical Engineering Symposium**, Iowa State University, March 2008
97. Nihar Mohanty and Vikas Berry, "*Biological Interfacing with Chemically Modified Graphene for Biosensing and Logic Devices*", **Biochemical Engineering Symposium**, Iowa State University, March 2008
  98. **Invited Talk**, Vikas Berry, "*Bionanotechnology and Cooperative Molecular Electronics*", **Condensed Matter Group**, Department of Physics, Kansas State University, September 2007
  99. **Invited Talk**, Ravi Saraf, Vikas Berry, Sanjun Niu, Vivek Maheshwari, Jennifer Kane, "*Electronic Nanodevices on Biomolecules and Microorganism Scaffold* ", **Material Research Society**, San Francisco, CA, April 2007
  100. Vikas Berry, Ravi Saraf, "*Humidity sensor based on tunneling barrier width modulation*", **Heartland Biomedical Engineering Symposium**, Omaha, NE, April 2005
  101. Vikas Berry, Ravi Saraf, "*Nanodevice piggyback on bacteria*", **American Physical Society – March Conference**, Los Angeles, CA, March 2005

#### ADMINISTRATION:

##### DEPARTMENT HEAD – CHEMICAL ENGINEERING, UIC

1. **Faculty Hiring:** Two eminent faculty members
  - a. NSF-CAREER Awardee, ~\$700K funds to be transferred to CHE
  - b. Sought after candidate with three offers
 Faculty numbers increased from 7.5 (2015) to 10.25 (2017). Total Faculty increased to 17.
2. **ChE Building:** Worked with Dean Nelson to make a strong case for a new ChE building. Currently in designing stage. Strong support from the department.
3. **TA Positions:** Made a case for increasing the TA positions for the department. TAs increased from **9 to 16**. Reduced the work load of the faculty.
4. **China Program:** Started a new China Program in the department. Commencement year revenue expected to be ~\$45,000. Next year ~ \$120,000.
5. **MS Enrollments:** Expected to increase by 55-61 % with the help of a hard-working graduate committee. Increase from **31 to ~50** (plus **6** students from the China Program).
6. **Staff Hiring:** Hired three new staff members: **Roberto Rodriguez, Sarai Chavez, and Jan Sagun**.
7. **Research Expenditure:** ChE expenditure increases by **35%**. With the new hires, these numbers are expected to increase further.
8. **Department Promotion:** Important for recruitment of students and faculty and for perception.
  - a. **AICHE reception X 2**
  - b. **Paul Weiss reception** at Berry Residence
  - c. Promotional videos created
    - i. **Research Excellence: Youtube:**  
<https://www.youtube.com/watch?v=aMqqilgDJ64>

- ii. **Educational Excellence: Underway**  
<https://uicmanager.sharestream.net/ssdcms/i.do?u=c099faf93efc499>
- d. **Promotional memorabilia** were designed.
- e. **Renovated the CEB entrance with monitors and corridors with research art.**
- 9. **Industry and Alumni:** Chemie Forum, Industry Day and Alumni Day events were started in the department. ChE bestowed its first Chemical Engineering Champion Award.
- 10. **Mentoring Program:** Started a Mentoring Program for junior faculty
  - a. Monthly lunch with successful faculty (invited from the Chicago area)
  - b. Mentored Ying and Brian on NSF-ICORP. Ying received ICORP and Brian received POC.
  - c. Have started an internal NSF-CAREER Review Panel.
- 11. **Operations:** Written new bylaws for the department with the advisory committee. Streamlined the operations in the department by starting a culture of Memos for clarity of procedures. Conducted regular staff meetings and worked with the auditor.
- 12. **Collaborations for the Department:**
  - a. Started Chemical Engineering Research Symposium
  - b. Starting Research Panel Discussions
  - c. Made connections with the Argonne National Laboratory and University of Chicago.

**Other Activities:** (a) Added **four adjunct faculty**, (b) faculty given an option to add a **monitor in their office** for research discussion/showcasing, (c) started **Chem-E-Car program** in UIC, (d) wrote **proposals** for funding to ChE, and (e) worked closely with the advisory committee on all department decisions.

#### SERVICE ACTIVITIES:

1. **Editorial Board Member of Nature's Scientific Reports** (<http://www.nature.com/srep/eap-ebm/index.html#chemistry>)
2. **Guest Editor for Journal of Nanomaterials and Molecular Nanotechnology**
3. **Served as a reviewer for several journals**
  - a. Science
  - b. Nature
  - c. Nature Nanotechnology
  - d. Nature Materials
  - e. Nature Communications
  - f. Nature's Scientific-Reports
  - g. Nature Protocols
  - h. Nano Letters
  - i. ACS-Nano
  - j. Angewandte Chemie
  - k. Journal of the American Chemical Society
  - l. Small
  - m. Advanced Materials

- n. Nanoscale, Nanoresearch
  - o. IEEE-nano
  - p. The Analyst
  - q. Journal of Physical Chemistry
  - r. Chemistry of Materials
4. **Served as a reviewer for several grant-review panels and individual proposals:**
    - a. NSF (Dec 2014, Jan 2012, May 2011, Oct 2010, March 2010, Nov 2008, Nov 2007)
    - b. DoE (June 2013, Feb 2012)
    - c. NIH (June 2010, Nov 2009)
    - d. Wayne State University (March 2011): Reviewer for the *Research Enhancement Program in Physical Sciences* (1 proposal)
    - e. Netherlands Office of Science (Jul 2009): Reviewer for *Science for Global Development* program (1 proposal)
    - f. Czech Science Foundation (July 2013, 2014 12 Proposal)
  5. **Conference Chair:**
    - a. Recent Advanced in Graphene and Related materials: Chair; 2010 (Singapore)
    - b. AIChE: Chair for "*Graphene and Carbon Nanotube Based Devices*", (Nov 2014, Nov 2013, Nov 2012, Nov 2011, Nov 2010, Nov 2009)
    - c. AIChE: Chair for "*Integration of Biological Systems with Electronic and Photonics*", (Nov 2010, Nov 2011)
    - d. APS: Chair for "*Graphene Structure: Local Probes*", Mar 2010
    - e. MRS: Chair, Mar 2012
  6. **Scientific Board Member:**
    - *Journal of Nanoscience Letters*
    - *All Results Journal – Nano*
  7. Serve in the Graduate Committee (20 students)
  8. Member of Materials Research Society, American Chemical Society, American Institute of Chemical Engineers, and American Physical Society
  9. University/College/Department:
    - a. Executive Committee Member, COE - UIC
    - b. Search Committee Member: Faculty, UIC.
    - c. Search Committee Member: Dean, College of Engineering (2013)
    - d. NSF-CAREER Workshop speaker (2012, 2013)
    - e. Search Committee Member: Assistant Professor (2014, 2012, 2011)
    - f. Tenure and Promotion Documentation Committee Member (2013)
    - g. Core Facilities Committee Member
    - h. PhD Qualification Process Committee member (2011)
    - i. Undergraduate Advisor.

## RESEARCH NEWS FEATURED IN SCIENCE-NEWS PORTALS

### VIDEOS/PODCASTS

1. **PODCAST IN MICROBE MAGAZINE (START AT 4:30):**  
<http://www.microbeworld.org/podcasts/microbe-magazine-podcast/2193-how-bacteria-can-change-graphene-to-propel-rotors>
2. **FEATURED RESEARCH-EXCELLENCE VIDEO FOR THE STATE OF THE UNIVERSITY**

**ADDRESS BY UNIVERSITY PRESIDENT:**

<http://youtu.be/YlJMVl5c74k>

3. **PHOTONIC MEDIA:** <http://www.youtube.com/watch?v=mIVLgfYJknE#t=2m37s>
4. **AMERICAN CHEMICAL SOCIETY:** <http://pubs.acs.org/page/jpclcd/berry-video.html>
5. **K-STATE FEATURE:**  
<http://www.youtube.com/watch?v=7VzPkuvGIn4&feature=edu&list=PLC476237DAF61390B>
6. **JOURNAL OF PHYSICAL CHEMISTRY:**  
<http://www.slideshare.net/jpcoffice/hot-papersubmissionjpclberry>

***Graphene-Phonics for Cancer Detection:***

1. **AICHE:**  
<https://www.aiche.org/chenected/2016/12/graphene-detects-brain-cancer-cells>
2. **THE ENGINEER:**  
<https://www.theengineer.co.uk/graphene-used-to-identify-cancerous-cells/>
3. **DIGITAL TRENDS:**  
<http://www.digitaltrends.com/cool-tech/graphene-detects-cancer-cells/>
4. **NEW ATLAS:**  
<http://newatlas.com/graphene-cancer-detection/47044/>

***Germs add ripples to make 'groovy' graphene:***

1. **THE ECONOMIST:**  
<http://www.economist.com/news/science-and-technology/21704743-bacteria-may-be-key-turning-graphene-semiconductor-bugs>
2. **PHYS-ORG:**  
<http://phys.org/news/2016-07-germs-ripples-groovy-graphene.html>
3. **SCIENCE NEWSLINE, PHYSICS & CHEMISTRY:**  
<http://www.sciencenewsline.com/news/2016071215310083.html>

***Graphene-Quantum-Dot on Bacteria Electromechanical Device:***

1. **WASHINGTON POST:**  
<http://www.washingtonpost.com/news/morning-mix/wp/2015/04/09/those-nanobots-from-the-x-files-are-now-a-real-thing/?postshare=5231428576845674>
2. **WALL STREET JOURNAL:**  
<http://www.wsj.com/articles/a-tiny-robot-senses-humidity-1427478730?tesla=y>
3. **SCIENCE DAILY**
4. **EE-TIMES**
5. **POPULAR SCIENCE**
6. **IEEE SPECTRUM**
7. **MOTHERBOARD**
8. **SCIENCE360**
9. **REDORBIT**
10. **NANOWERK**
11. **GIZMAG**
12. **THE ENGINEER**
13. **EXTREME TECH**
14. **R&D MAG**
15. **ESCIENCE NEWS**

16. **PHYS ORG**
17. **EUREKAALERT!**
18. **NANOTECHNOLOGY NOW**

*Molybdenum Disulphide Coupled with Gold Nanoparticles to Enhance Gating Characteristics*

19. **SCIENCE DAILY:**  
<http://www.sciencedaily.com/releases/2013/09/130905112125.htm>
20. **IEEE SPECTRUM:**  
<http://spectrum.ieee.org/nanoclast/semiconductors/nanotechnology/gold-nanoparticles-make-molybdenum-disulfide-extra-special>
21. **KURZWEIL:** <http://www.kurzweilai.net/another-breakthrough-in-replacing-silicon-in-transistors>
22. **SCIENCE WORLD REPORT:**  
<http://www.scienceworldreport.com/articles/9387/20130910/advance-wonder-material-molybdenum-disulfide-brings-ultrathin-electronics-closer.htm>
23. **EET-INDIA:**  
[http://www.eetindia.co.in/ART\\_8800689562\\_1800001\\_NT\\_418db36e.HTM?jumpto=view\\_welcomead\\_1379441588454](http://www.eetindia.co.in/ART_8800689562_1800001_NT_418db36e.HTM?jumpto=view_welcomead_1379441588454)
24. **THE ENGINEER:** <http://www.theengineer.co.uk/channels/design-engineering/news/gold-standard-for-future-electronic-devices/1017061.article>

*Graphene Quantum Dots Based Electron-Tunneling Sensors*

1. **SCIENCE DAILY:**  
<http://www.sciencedaily.com/releases/2013/05/130508131851.htm>
2. **PHYS-ORG:** <http://phys.org/news/2013-05-graphene-quantum-dots-humidity-pressure.html>
3. **e! SCIENCE NEWS:**  
<http://esciencenews.com/articles/2013/05/08/researchers.use.graphene.quantum.dots.detect.humidity.and.pressure>
4. **ZEE-NEWS INDIA:** [http://zeenews.india.com/news/space/improved-sensing-devices-may-someday-tell-if-it-will-rain-on-mars\\_848082.html](http://zeenews.india.com/news/space/improved-sensing-devices-may-someday-tell-if-it-will-rain-on-mars_848082.html)
5. **NANO WERKS:**  
[http://www.nanowerk.com/news2/newsid=30411.php?utm\\_source=feedburner&utm\\_medium=twitter&utm\\_campaign=Feed%3A+nanowerk%2FagWB+%28Nanowerk+Nanotechnology+News%29](http://www.nanowerk.com/news2/newsid=30411.php?utm_source=feedburner&utm_medium=twitter&utm_campaign=Feed%3A+nanowerk%2FagWB+%28Nanowerk+Nanotechnology+News%29)

*Graphene Quantum Dots and Nanoribbons Produced via Diamond Knife*

1. **LASER FOCUS WORLD**  
<http://www.laserfocusworld.com/news/2012/05/21/professor-uses-diamond-to-produce-graphene-quantum-dots-and-nano-ribbons-of-controlled-structure.html>
2. **AZO-NANO:** <http://www.azonano.com/news.aspx?newsID=24874>
3. **BIG NEXT FUTURE:** <http://nextbigfuture.com/2012/05/professor-uses-diamond-to-produce.html>
4. **THE ENGINEER:** <http://www.theengineer.co.uk/sectors/electronics/news/advance-in-graphene-quantum-dots-benefits-optoelectronics/1012647.article>
5. **FROGHEART:** <http://www.frogheart.ca/?p=6785>
6. **EE-TIMES:** [http://www.eetindia.co.in/ART\\_8800667407\\_1800010\\_NT\\_b846de0d.HTM](http://www.eetindia.co.in/ART_8800667407_1800010_NT_b846de0d.HTM)
7. **SCIENCE-DAILY:** <http://www.sciencedaily.com/releases/2012/05/120517193141.htm>
8. **NEW-ELECTRONICS:** <http://www.newelectronics.co.uk/electronics-news/us-researchers-make-graphene-breakthrough/42465/>

### ***Bacterial Wrapping with Graphene***

1. **NATURE MAGAZINE**  
<http://www.nature.com/news/2010/100318/full/news.2010.134.html>
2. **CHEMICAL ENGINEERING PROGRESS:** <http://www.che.ksu.edu/~vberry/CEP-2011.pdf>
3. **MICROSCOPY TODAY:** <http://content.yudu.com/A1rzjk/MTO19Issue4/resources/10.htm>
4. **CHEMPHYSICHEM FEATURE ARTICLE:**  
<http://onlinelibrary.wiley.com/doi/10.1002/cphc.201100255/abstract;jsessionid=4A95B19D64D07A205EAF9468BDA13120.d03t01>
5. **PHYSICS WORLD:** [http://physicsworld.com/blog/2009/03/fancy\\_a\\_bacterium\\_wrap.html](http://physicsworld.com/blog/2009/03/fancy_a_bacterium_wrap.html)
6. **PHYSORG:** <http://www.physorg.com/news/2011-03-graphene-cloak-bacteria.html>
7. **COSMOS MAGAZINE:** <http://www.cosmosmagazine.com/news/4157/new-graphene-cloak-spy-bacteria>
8. **SCIENCE DAILY:** <http://www.sciencedaily.com/releases/2011/03/110315130043.htm>
9. **MEDICAL NEWS TODAY:** <http://www.medicalnewstoday.com/articles/219256.php>
10. <http://news.softpedia.com/news/Graphene-Shrouds-for-Bacteria-Created-137867.shtml>
11. <http://nextbigfuture.com/2011/03/graphene-cloak-protects-bacteria.html>
12. [http://esciencenews.com/articles/2011/03/15/all\\_wrapped\\_k\\_state\\_researchers\\_graphene\\_cloak\\_protects\\_bacteria\\_leading\\_better\\_images](http://esciencenews.com/articles/2011/03/15/all_wrapped_k_state_researchers_graphene_cloak_protects_bacteria_leading_better_images)
13. <http://www.nanowerk.com/news/newsid=20545.php>
14. [http://www.microbeworld.org/index.php?option=com\\_jlibrary&view=article&id=6180](http://www.microbeworld.org/index.php?option=com_jlibrary&view=article&id=6180)
15. <http://www.azonano.com/news.asp?newsID=21940>
16. **PHOTONIC MEDIA (discussion starts at 2:37):** <http://www.che.ksu.edu/~vberry/News.html>

### ***Berry's Commentary on the 2010 Nobel Prize in Physics was published in Wiley:***

1. **WILEY:** [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1439-7641/homepage/news/14446.en.html](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1439-7641/homepage/news/14446.en.html)
2. **NANOTECHWIRE:** <http://mobile.nanotechwire.com/news.asp?nid=10846>

### ***NSF-CAREER Award***

1. **NEWSWISE:** <http://www.newswise.com/articles/groundbreaker-chemical-engineer-earns-national-science-foundation-career-award-for-work-with-graphene-quantum-dots>
2. **AZONANO:** <http://www.azonano.com/news.asp?newsID=21602>

### ***Graphene based Biointerfaced devices***

1. **SCIENCE DAILY:** <http://www.sciencedaily.com/releases/2009/04/090413141256.htm>
2. **PHYSORG:** <http://www.physorg.com/news158850916.html>
3. **SCIENCE CENTRIC**  
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5. **MEDICAL NEWS TODAY**  
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#### *Graphene-Gold Interfacing*

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2. **SCIENCE DAILY:** <http://www.sciencedaily.com/releases/2009/10/091013112521.htm>
3. **PHYSORG:** <http://www.physorg.com/news174590038.html>
4. **NANOTECH-NOW:** [http://www.nanotech-now.com/news.cgi?story\\_id=34988](http://www.nanotech-now.com/news.cgi?story_id=34988)
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#### *Other Commentaries:*

1. **(UIC) Science News: For Nobel Laureate's Work Published in Nature**  
<https://www.sciencenews.org/article/%E2%80%98impermeable%E2%80%99-graphene-yields-protons>
2. **Chemical & Engineering News:**  
<http://cen.acs.org/signin.html?resource=/content/cen/articles/90/web/2012/01/Unexpected-Glow>

### *From PhD Work*

1. **NATURE MAGAZINE:** <http://www.nature.com/nature/journal/v437/n7063/full/4371210a.html>
2. **SCIENCE NEWS:**  
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3. **DISCOVER MAGAZINE:** <http://discovermagazine.com/2006/feb/cyborg-bacteria>
4. **MSNBC:** <http://www.msnbc.msn.com/id/9841437/>
5. **ROYAL SOCIETY OF CHEMISTRY:**  
<http://www.rsc.org/chemistryworld/News/2005/October/12100501.asp>

### **CURRENT GROUP-MEMBERS AND ALUMNI**

#### **Post-Doctoral Fellow**

- |                         |                          |                          |
|-------------------------|--------------------------|--------------------------|
| 1. Dr. Sanjay Behura    | Post-Doc Fellow, 2014-16 | Research Asst. Prof, UIC |
| 2. Dr. T. S. Sreeprasad | Post-Doc Fellow, 2012-14 | Clemson University       |
| 3. Dr. Vasanta Pallem   | Post-Doc Fellow, 2013    | Deceased                 |

#### **Graduate Students**

- |                           |               |      |                     |  |
|---------------------------|---------------|------|---------------------|--|
| 4. Kabeer Jasuja          | PhD           | 2011 | Assistant Professor | Indian Institute of Technology – Ghandinagar |
| 5. Nihar Mohanty          | PhD           | 2011 | Process Engineer    | Tokyo Electron                               |
| 6. Phong Nguyen           | PhD           | 2016 | Process Engineer    | Air-Liquide                                  |
| 7. Vedhikha Parthasarathy | MS            | 2015 |                     |  |
| 8. Kai-Chih Chang         | MS            | 2016 |                     |  |
| 9. Xin Yu                 | MS            | 2016 |                     |  |
| 10. Shikai Deng           | PhD Candidate |      |                     |  |
| 11. Songwei Che           | PhD Candidate |      |                     |  |
| 12. Rousan Debbarma       | PhD Candidate |      |                     |  |
| 13. Nicki Keisham         | PhD Candidate |      |                     |  |
| 14. Deisy Arrington       | PhD Candidate |      |                     |  |
| 15. Yu Wen                | PhD Candidate |      |                     |  |
| 16. Cheng Wang            | PhD Candidate |      |                     |  |
| 17. Dylan Lynch           | PhD Candidate |      |                     |  |
| 18. Donovan Briggs        | MS Incomplete |      |                     |  |

#### **Undergraduate Students**

- |                        |               |  |  |                           |
|------------------------|---------------|--|--|---------------------------|
| 19. Roxanne Vitorillo  |               |  |  |                           |
| 20. Fayyazul Hassan    |               |  |  |                           |
| 21. Zamia Siddiqui     |               |  |  |                           |
| 22. Ariane Gomes       |               |  |  |                           |
| 23. Leo Anderson       |               |  |  |                           |
| 24. Ahmed Alshogeahtri |               |  |  |                           |
| 25. Luke Hibbeler      |               |  |  |                           |
| 26. Fabian Martinez    |               |  |  |                           |
| 27. Nolan McNeil       |               |  |  |                           |
| 28. Monica Fahrenholz  | PhD Candidate |  |  | Rice University           |
| 29. Mark Battig        | PhD Candidate |  |  | University of Connecticut |
| 30. Ashvin Nagaraja    | MS Candidate  |  |  | Texas A&M University      |
| 31. Steven Melton      | MS Candidate  |  |  | Kansas State University   |

- |                          |                  |                        |
|--------------------------|------------------|------------------------|
| 32. Christina Davis      | PhD Candidate    | University of Nebraska |
| 33. Joshua Linn          | Process Engineer |                        |
| 34. Jose Armesto         | Process Engineer |                        |
| 35. Arthur Thompson      | Process Engineer | Sprint Inc             |
| 36. Kayum Ayinde         |                  |                        |
| 37. Nathan Lechtenberg   |                  |                        |
| 38. Jonggeun Sung        |                  |                        |
| 39. Cody Fager           |                  |                        |
| 40. Alfredo A. Rodriguez |                  |                        |
| 41. Jonathan Colston     |                  |                        |
| 42. Augustus Graham      |                  |                        |
| 43. Evgeniy Shishkin,    |                  |                        |
| 44. Namhoon Kim          |                  |                        |
| 45. Nitya Jangam         |                  |                        |
| 46. Jenaë Tate           |                  |                        |