

## MICHAEL A. BEVAN

### Professional Preparation

Lehigh University, Chemical Engineering, B.S., 1994.

Lehigh University, Chemistry, B.S., 1994.

Carnegie Mellon University, Chemical Engineering, Ph.D., 1999.

University of Melbourne-Australia, Chemistry/Chem. Eng./Math, postdoc, 1999-2001.

University of Illinois at Urbana-Champaign, Material Science/Physics, postdoc, 2001-2002.

### Appointments

Associate Professor of Chemical & Biomolecular Engr., Johns Hopkins Univ., Jan 2008-.

Associate Professor of Chemical Engr. & Mechanical Engr., Texas A&M Univ., Sept 2007-Dec 2007.

Assistant Professor of Chemical Engineering, Texas A&M University, Aug 2002-Aug 2007.

### Honors/Awards

1. NSF Presidential Early Career Award for Scientists and Engineers (PECASE), 2005.
2. NSF CAREER award, Engineering Directorate, CTS Division, 2004.
3. Beckman Fellowship, national award by Arnold and Mabel Beckman Foundation, 2001.
4. Henkel Fellowship, national award by ACS Colloids & Surfaces Division, 1998.

### Five publications most closely related to the proposed project

1. Diffusing Colloidal Probes of Protein and Synthetic Macromolecule Interactions, Everett, W.N.; Wu, H.; Anekal, S.G.; Sue, H.; Bevan, M.A. *Biophys. J.* Vol. 92, 1005-1013, 2007.
2. Imaging Energy Landscapes with Concentrated Diffusing Colloidal Probes, Bahukudumbi, P.; Bevan, M.A. *J. Chem. Phys.* Vol. 126, 244702, 2007.
3. Equivalent Temperature and Specific Ion Effects in Macromolecule Coated Colloid Interactions, Fernandes, G.; Bevan, M.A. *Langmuir* Vol. 23, 1500-1506, 2007.
4. Mapping Patterned Potential Energy Landscapes with Diffusing Colloidal Probes, Wu, H.; Everett, W.N.; Anekal, S.G.; Bevan, M.A. *Langmuir* Vol. 22, 6826-6836, 2006.
5. Forces and Hydrodynamic Interactions between Polystyrene Surfaces with Adsorbed PEO-PPO-PEO, Bevan, M.A.; Prieve, D.C. *Langmuir* Vol. 16, No. 24, pgs. 9274-9281, 2000.

### Five other significant publications

1. Measurement and Interpretation of Particle-Particle and Particle-Wall Interactions in Levitated Colloidal Ensembles, Wu, H.; Pangburn, T.O.; Beckham, R.E.; Bevan, M.A. *Langmuir* Vol. 21, No. 22, 9879-9888, 2005.
2. Direct Measurement of Single and Ensemble Average Particle-Surface Potential Energy Profiles, Wu, H.; Bevan, M.A. *Langmuir* Vol. 21, No. 4, 1244-1254, 2005.
3. Specific Ion-Dependent Attraction and Phase Behavior of Polymer-Coated Colloids, Hwang, K.; Wu, H.; Bevan, M.A. *Langmuir* Vol. 20, No. 26, 11393-11401, 2004.
4. Solvent Quality Dependent Continuum van der Waals Attraction and Phase Behavior for Colloids Bearing Nonuniform Adsorbed Polymer Layers, Bevan, M.A.; Petris, S.N.; Chan, D.Y.C. *Langmuir* Vol. 18, No. 21, 7845-7852, 2002.
5. Direct Measurement of Retarded van der Waals Attraction (Cover Story), Bevan, M.A.; Prieve, D.C. *Langmuir* Vol. 15, No. 23, pgs. 7925-7936, 1999.

### Synergistic Activities

1. *Courses Related to Research:* Undergraduate Intro to Thermodynamics (CHEN 205), Undergraduate Honors Research (CHEN 485), Undergraduate Intro to Polymers (CHEN 451), Graduate Intro to

Polymers (CHEN 641), Departmental Seminars (CHEN 681), Nanotechnology in High School Physics (CHEN 685), Graduate Introduction to Colloidal and Interfacial Systems (CHEN 642).

2. *Professional Societies*: American Chemical Society, American Institute of Chemical Engineers, International Association of Colloid and Surface Science
3. *Journal Reviewer*: 2. Journal Reviewer for Advanced Functional Materials, Advanced Materials, AIChE Journal, Analytical Chemistry, Chemistry of Materials, ChemPhysChem, Colloids & Surfaces, Environmental Science & Technology, Langmuir, Industrial & Engineering Chemistry Research, Journal of Colloid & Interface Science, Journal of Materials Chemistry, Journal of Material Science, Journal of Fluid Mechanics, Journal of Rheology, Nanoletters, The Journal of Physical Chemistry
4. *NSF Panel Reviewer*: CTS Division, 6.2004, 4.2005, 10.2005, 10.2006, 12.2006, 5.2007.
5. *Proposal Reviewer*: ACS PRF, CRC (Canada Research Chairs), DOE, EPA, NSF, USDA.
6. *Symposium Organizer/Chair*: AIChE national meeting sessions: 2005, 2006, 2007; ACS Colloid and Surface Science Division meeting sessions: 2001, 2004, 2008; ACS symposium - Colloidal Assembly: Fundamentals, Novel Approaches, and Emerging Applications, 2005-229th ACS National Spring Meeting, San Diego, CA.
7. *Integrated Research & Education*: Extensive use of experimental and simulated images, videos, and animations from research in class lectures and outreach presentations to women, minorities, k-12 students & teachers, and prospective students. Includes role as "Nano team" leader in Information Technology in Science NSF CLT at Texas A&M for 7-12 teachers.
8. *High School Student Research*: College Station H.S. student Maryam Moaddel developed digital video microscopy experiments using toy microscopes under my supervision.
9. *Undergraduate Research Advising*: Undergrad researchers advised as participants in honors research, the Undergraduate Summer Research Grant program at Texas A&M, and NSF-REU sponsored research. Students include Ashley Hurley, Blake Bennett, Nicole Johnson, Todd Pangburn (Minnesota), William Bryant, Tracie Book, Marshall Plunk, Christian Vogt, Blake Bennet, Daniel Beltran (Texas A&M), Carlos Jaimes, Luke Hunter (Harvard). Todd Pangburn published 3 papers and is attending grad school at Minnesota on a NSF Graduate Fellowship.

#### **Collaborators and Other Affiliations**

1. *Collaborators*: Ali Beskok (Mech. Eng., Old Dominion Univ.), David Ford (Chem. Eng., Univ. Mass Amherst), Dimitri Lagoudas (Aero. Eng., Texas A&M), Michael Manson (Biology, Texas A&M), Kenneth Meissner (Biomed. Eng., Texas A&M), Hung-Jue Sue (Mech. Eng., Texas A&M), Zoubeida Ounaies (Aero. Eng., Texas A&M)
2. *Post Doctoral Advisors*: Professors Pierre Wiltzius, Jennifer Lewis, Paul Baun (Beckman Institute, Univ. of Illinois at Urbana-Champaign); Professors David Boger, Franz Grieser, Derek Chan (Particulate Fluids Processing Centre, Univ. of Melbourne, Australia)
3. *Graduate Advisor*: Professor Dennis C. Prieve (Carnegie Mellon Univ.)

#### **Thesis Advisor and Postgraduate Scholar Sponsor**

1. *Current Ph.D. students*: Richard Beckham, Daniel Beltran, Gregory Fernandes, Shannon Eichmann, Jaime Juarez
2. *Former Ph.D. students*: Samartha Anekal (Wisconsin), Pradip Bahukudumbi (Milliken Corp.), Neil Everett (Texas A&M), Mingqing Lu (Capital One), Hung-Jen Wu (Berkeley)
3. *Former M.S. students*: Gregory Fernandes (Texas A&M), Sumit Sharma (Halliburton)