

CURRICULUM VITAE

(September 2017)

1. Amit Basu

Associate Professor
Department of Chemistry
Brown University

2. Address

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Brown University
Providence, RI 02912
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3. Education

B.A., Reed College, 1992 (Advisor: Patrick McDougal)
Ph.D., University of Illinois at Urbana-Champaign, 1996 (Advisor: Peter Beak)
Post-doctoral Research, Princeton University 1996-1999 (Advisor: Daniel Kahne)

Ph. D. Dissertation – Enantioselective Lateral Lithiation-Substitution of *O*-Ethyl and *O*-Benzyl *N*-Pivaloyl Anilines: Studies of a Pathway of Stereoinformation Transfer.

4. Professional Appointments

Associate Professor of Chemistry, Brown University, 2006-present
Assistant Professor of Chemistry, Brown University, 1999-2006
Postdoctoral Research Associate, Princeton University, 1996-1999
Graduate Research Assistant, University of Illinois, 1994-1996
Graduate Teaching Assistant, University of Illinois, 1992-1994

5. Awards

RC Fuson Research Award, 1995
Department of Education/Chevron Graduate Fellowship, 1994-1995
Research Innovation Award, 2001-2006
NSF Faculty Early CAREER Award, 2002-2006
Mizutani Award in Glycoscience 2005
Karen T Romer Prize for Undergraduate Advising & Mentoring, 2014
Fudan University State Key Laboratory Senior Visiting Scholar (2016-2017)

6. Professional Activities

Invited Participant, NSF Workshop in Physical Organic Chemistry, June, 2001.
ad hoc Member, NIH Bioorganic and Natural Products Study Section, Feb. 2003
Session Chair, Gordon Conference on Carbohydrates, June 2003
Session Chair, 226th ACS National Meeting, New York, NY, September 10, 2003.
POLY Symposium on Molecular Recognition using Polymeric Materials.
Invited Participant, DARPA/NIH/Juvenile Diabetes Research Foundation Workshop on Diabetic Wound Healing, Sep. 22-23, 2003.

Session Chair, 230th ACS National Meeting, Washington, MA, August 29, 2005.

POLY Symposium on Molecular Recognition using Polymers.

Invited Participant, NSF Workshop in Materials Science, Oct. 2006

Guest Editor, December 2006 Issue of Current Opinion in Chemical Biology

ad hoc NIH SBIR/STTR Special Emphasis Panel, Mar 2008

NSF CHE Panel Reviewer, Fall 2008, 2016

ad hoc Study Section Member, NIH SBIR/STTR Special Emphasis Panel, July 2009

ad hoc Member, NIH SBCA Study Section, Oct 2009

Chartered member, NIH SBCA Study Section (2010-14)

Elected member-at-large, ACS CARB Division Executive Committee (2012-14)

Session Chair, Gordon Research Conference on Carbohydrates, June 2015

Ad hoc member, NIH ZRG study section on F31/F32 fellowships (Feb, Jun, Nov, 2017)

7. Publications

27. *Diamide inhibitors of the Bacillus subtilis N-acetylglucosaminidase LytG that exhibit anti-bacterial activity.* S Nayyab, M O'Connor, J Brewster, J Gravier, M Jamieson, E Magno, R Miller, D Phelan, K Roohani, P Williard, A Basu, and C W Reid. *ACS Infect. Dis.* **2017**, 3 421–427.
26. *Glycopolymers Prepared by Ring-Opening Metathesis Polymerization Followed by Glycoconjugation Using a Triazole-Forming "Click" Reaction* Okoth, R. Basu, A. *Methods in molecular biology.* **2016.** 1367 29-37.
25. *Galactan synthesis in a single step via oligomerization of monosaccharides* M. Dräger and A. Basu *Beilstein J. Org. Chem.* **2014**, 10, 2658–2663;
24. *Anti-bacterial glycosyl triazoles – Identification of an N-acetyl glucosamine derivative with bacteriostatic activity against Bacillus* H. Kuhn, D. Gutelius, E. Black, C. Nadolny, A. Basu, and C. Reid *Med. Chem. Commun.* **2014**, 5, 1213-1217.
23. *A rapid, inexpensive, and semi-quantitative method for determining pollen tube extension using fluorescence* E. Hartman, C. Levy, D. M. Kern, M. Johnson, and A. Basu *Plant Methods* **2014**, 10:3; doi:10.1186/1746-4811-10-3
22. *End-Labeled Amino Terminated Monotelechelic Glycopolymers Generated by ROMP and Cu(I)-Catalyzed Azide – Alkyne Cycloaddition* R. Okoth and A. Basu, *Beilstein J. Org. Chem.* **2013**, 9, 608-612.
21. *Synthesis, characterization, and lectin-binding studies of carbohydrate-functionalized silica nanoparticles* J. Zhao, Y. Liu, H-J. Park, J. M. Boggs, and A. Basu. *Bioconjugate Chem.* **2012**, 23, 1166-1173.
20. *Photo- and Biophysical Studies of Lectin-Conjugated Fluorescent Nanoparticles: Reduced Sensitivity in High Density Assays* Y. Wang, J. C. Gildersleeve, A. Basu, M. B. Zimmt, *J. Phys. Chem. B*, **2010**, 114, 14487-14494
19. *Participation of Myelin Glycosphingolipids, Galactosylceramide and Sulfatide, in Glycosynapses between Oligodendrocyte or Myelin Membranes* J. M. Boggs, W. Gao, J. Zhao, H. Park, Y. Liu, and A. Basu. *FEBS Letters* **2010**, 584, 1771-1778.
18. *Core Functionalization of Hollow Polymer Nanocapsules.* X. Liu and A. Basu. *J. Am. Chem. Soc.* **2009**, 131, 5718-5719.
17. *Probing the lactose•GM3 carbohydrate-carbohydrate interaction with glycodendrimers* N. Seah, P.V. Santacrose and A. Basu. *Org. Lett.* **2009**, 11, 559-562.

16. *Cross-linked polynorbornene-coated gold nanoparticles – Dependence of particle stability on cross-linking position and cross-linker structure* X. Liu and A. Basu. *Langmuir*, **2008**, *24*, 11169-11174.
15. *Colorimetric Sensing and Biosensing using Functionalized Conjugated Polymers* A. Basu. *Molecular Recognition Using Polymers*. John Wiley & Sons. **2008** Ed. V. Rotello & S. Thayumanavan.
14. *Carbohydrate-carbohydrate interactions* N. Seah and A. Basu. *Encyclopedia of Chemical Biology*, John Wiley & Sons. **2008** Ed. T. Begley.
13. *Reagentless functionalization of gold nanoparticles via a 3 + 2 Huisgen cycloaddition* J. Coll. *Interfac. Sci.* **2008**, *318*, 140-144. W. Limapichat and A. Basu
12. *Model Systems* Basu, A. and Schneider, J. *Curr. Opin. Chem. Biol.* **2006**, *10*, 527–528.
11. *Olefin Metathesis on Nanostructures*. Liu, X. and Basu, A. *J. Organomet. Chem.* **2006**, *691*, 5148-5154. (Invited Submission, Special Issue on Alkene Metathesis)
10. *Two Polymerizable Derivatives of 2,2'-Azino-bis(3-ethylbenzthiazoline-6-sulfonic acid)* J. Fei, A. Basu, F. Xue, G. T. R. Palmore *Org. Lett.* **2006**; *8*, 3-6.
9. *Glycosidase Inhibition by 1-Glycosyl-4-Phenyl Triazoles* L. L. Rossi and A. Basu. *Bioorg. Med. Chem. Lett.* **2005**, *15*, 3596-3599.
8. *Synthesis of the glycosphingolipid β -galactosyl ceramide and analogs via olefin cross metathesis* A. N. Rai and A. Basu. *J. Org. Chem.* **2005**, *70*, 8228-8230.
7. *Studies of the Carbohydrate-Carbohydrate Interaction Between Lactose and GM₃ using Langmuir Monolayers and Glycolipid Micelles* P. V. Santacroce and A. Basu. *Glycoconjugate J.* **2004**. *21*, 89-95. (Invited Submission, Special Issue on Carbohydrate-Carbohydrate Interactions)
6. *Sphingolipid synthesis via olefin cross metathesis: Preparation of a differentially protected building block and application to the synthesis of D-erythro-ceramide* A. N. Rai and A. Basu *Org Lett.* **2004**, *6*, 2861-2863.
5. *Lipopolysaccharide identification with functionalized polydiacetylene liposome sensors* M. Rangin and A. Basu. *J. Am. Chem. Soc.* **2004**, *126*, 5038-5039.
4. *3-Methoxycarbonyl-5-nitrophenyl boronic acid: High affinity diol recognition at neutral pH* H. R. Mulla, N. J. Agard and A. Basu *Bioorg. Med. Chem. Lett.* **2004**, *14*, 25-27.
3. *A Rapid and Efficient Method for para-Methoxybenzyl Ether Formation with Lanthanum Triflate* A. N. Rai and A. Basu. *Tetrahedron. Lett.* **2003**, *44*, 2267-2269.
2. *Probing Specificity in Carbohydrate-Carbohydrate Interactions with Micelles and Langmuir Monolayers* P. V. Santacroce and A. Basu. *Angew. Chem. Int. Ed. Engl.* **2003**, *42*, 95-98.
1. *Configurational Stability and Stereoinformation Transfer in the Reactions of Enantioenriched Organolithium Reagents* A. Basu and S. Thayumanavan *Angew. Chem. Int. Ed. Engl.* **2002**, *41*, 716-738.

Patents

US Provisional Application Ser. No. 62/175,079 Updated Filing June 16, 2016- Novel N-Acetylglucosaminidase Inhibitors and Uses Thereof

8. Invited Presentations (last 5 yrs)

80. Fudan University, Shanghai, China, May 23, 24, 2016

79. Johnson and Johnson, Ethicon Division, Raritan NJ, Oct. 28, 2014.
78. Department of Chemistry, University of Arkansas, Fayetteville, Apr. 21, 2014.
77. Department of Chemistry, University of Pittsburgh, Mar. 27, 2014
76. Department of Chemistry, University of Rhode Island, Mar. 24, 2014
75. Invited Speaker, Frontiers in the Chemistry and Biology of Oligosaccharides, IISER Pune, India, Jan 2014
74. Invited Speaker, 27th International Carbohydrate Symposium, Bangalore, India, Jan 2014
73. Department of Chemistry & Biochemistry, University of Southern California, Nov. 19, 2013
72. Department of Chemistry & Biochemistry, University of Delaware, Oct. 30, 2013
71. University of Massachusetts @ Dartmouth, Sep. 18, 2013
70. Department of Chemistry & Biochemistry, Seton Hall University, Sep. 10, 2013.
69. Invited Speaker, Gordon Conference on Carbohydrates, VT, June 2013
68. Department of Chemistry, University of Toledo, April 3, 2013
67. "Molecules and Materials for Carbohydrate Recognition" Wayne State University, Nov. 2012
66. "Cutting Carbohydrates" Roger Williams University, Bristol RI, Oct 2012
65. "Molecules and Materials for Carbohydrate Recognition" Bogazici University, Istanbul Turkey, May 2012
64. "Cutting Carbohydrates" Colgate University, NY, Feb. 21, 2012.
63. "Probing carbohydrate-carbohydrate interactions with multivalent glycoconjugates" University of Missouri @ St. Louis, Jan. 2012.
62. "Probing carbohydrate-carbohydrate interactions with multivalent glycoconjugates" Northeastern University, Jan. 2012.

9. Service

i) To the Department/University:

Web Development Project (with Prof. C. Rose-Petruck) – Spring 2000 ~ Spring 2001
Potter Prize Committee – Spring 2000, Spring 2001
Dept. Fellowship Committee – Fall 2000
Organized revision of Graduate Third Year Research Proposal Requirements, 2000
Organic Seminar/Colloquium Committee – July 1999 ~ June 2002
Office of International Programs – Faculty Host for Visiting Scholar from University of Tanzania, Spring 2003
Organized revision of Organic Graduate Curriculum and Preliminary Examination Requirements, Spring 2004
Departmental Poster Prize Committee, 2005
Organic Search Committee – 2000–2006
University Science Education Committee 2006-2007
University General Education Task Force 2007-2008
Development of Chemical Biology/Materials Chemistry Track
Departmental Mentor to Assistant Professor Bazemore-Walker (2006 – present)
Annual Review Committee for Assistant Professor Bazemore-Walker (2007-present)

Faculty Advising Fellow (2008 ~ 2011)
Reappointment Committee Chair for Assistant Professor Jason Sello (2008)
Member, Biophysical Chemistry Search Committee (2008)
Panelist, Dean of the College Presentation on UTRA opportunities (2008)
OVPR ad hoc Restricted Submission Evaluation Committee (2009)
Coordinator - Undergraduate studies focus group for departmental external review (2009)
Transfer credit coordinator
Sheridan Center Panelist on UTRAs and teaching (2009)
Member of Sheridan Center Discussion Group on Teaching in the Sciences (2009)
Participant, Faculty Forum on Writing (2009)
Panelist, Meiklejohn Orientation (2010)
Participant, Wayland Collegium Discussion Group on Introductory Science/Pre-medical Curriculum (2010)
Speaker Sheridan Center – Integrating Research in the Undergraduate Laboratory (2010)
Reappointment Committee (Chair) for Lecturer Kathleen Hess (2011)
Tenure Evaluation Committee for Assistant Professor Jason Sello (2011)
Assistant Professor Classroom Peer Observation (2011)
New Scientist Program Faculty Lunch Participant (2011)
Sheridan Center Associate Director Interviews (2011)
ad hoc Curriculum Committee (2011)
Chair, Reappointment Committee for Lecturer Kathleen Hess
Development of ScB Thesis Guidelines
Member of Sheridan Center Discussion Group on Teaching in the Sciences
Office of International Programs – Faculty Host for Visiting Scholar from Bogazici University, Turkey, Spring 2012
Chair, Promotion Committee for Lecturer Kathleen Hess
Team Enhanced Advising and Mentoring (TEAM) member (2013 – present)
New Faculty Orientation Faculty Panelist – 2013
Chemistry Concentration Advisor/Director of Undergraduate Studies – Spring 2003 ~ present (55 current advisees)
Departmental Representative at Annual Concentration Fairs
Faculty Member in Charge of Departmental Solvent Delivery System
Science Center Advisory Board Member (2008 - 2016)
Randall Advisor (2011-2017)
Sophomore and Freshman Advisor
Departmental Safety Committee (2012 – present, Chair 2012-2014)
Panelist, Sheridan Center Certificate Workshop on Effective Assessments (Dec. 2014)
Organic Chemistry Search Committee (Fall 2014)
Participated in searches for Sheridan Center Associate Director, STEM (2014)
Karen T Romer Advising Prize Selection Committee (2015, 2016)
Chair, Organic Chemistry Search Committee (Fall 2016)
Orientation Speaker, Science Center Catalyst/MOSAIC Program (2016)

ii) To the Community:

Brown Learning Community (Chemistry) Summers 1999, 2000, 2001; Fall 2003
Scholar in Residence, Moses Brown School, Providence RI 2002-2003
Chemistry Outreach, Montessori Centre, Barrington RI, 2007, 2008, 2009

Guest Speaker on Prebiotic Chemistry, Seminar on Scientific Thought, Moses Brown School, 2009
Co-organizer and Participant – Math & Science Night, Primrose Hill Elementary, Barrington, RI, 2009
Speaker at GK-12 Conference at MLK Elementary School, 2010
Summer Science Lunch Presenter at Science Center, 2010
New Scientist Program Guest Speaker, 2010
Speaker at Nano/Bio Engineering Summer School for HS students, 2010
Presentation to K and 3rd grade classes, Primrose Hill Elementary School, 2010
Speaker at GK-12 Conference at MLK Elementary School, 2011
Workshop Presenter, NSF RITES Workshop for high-school teachers, URI, 2012
Science Outreach Workshop – Vartan Gregorian School, Jun 2013, Jun 2015, Jun 2017

10. Funding

Research Project Grant 7/2016 - 6/2019
NSF
Probes for studying plant arabinogalactan proteins
PI – A. Basu

Collaborative Proposal Development Program 5/2016 – 4/2018
RI-INBRE
Development of Narrow Spectrum Antibiotics that Target Bacterial N-Acetylglucosaminidases
PI- C. Reid, Bryant University;

Research Grant 6/2017 – 5/2018
RI Research Alliance
Nanofluidic Profiling of Marine Biopolymers: Synthetic and Sensing Tools for Aquatic Monitoring and Economic Development
PI – J. Dwyer, Univ. of Rhode Island; Basu co-Investigator