

Dr. Yuying Gosser,
Research Assistant Professor,
Direct of Student Research & Scholarship
Grove School of Engineering, CCNY
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Education

Brown University, Providence, RI Physical Organic Chemistry, NMR, Ph.D.1990
Yale University, New Haven, CT NMR spectroscopy Postdoctoral Training, 1990- 1991
Rockefeller University, New York, NY NMR structural Biology, Postdoctoral Training, 1991-1996

Appointments

Nov. 2008 – Present Director, Student Research and Scholarship, Grove School of Engineering, CCNY
Sept. 2004 – Present Director of the Pathways Bioinformatics and Biomolecular Center at CCNY,
Sept. 2003 – 2006 Director of the Pathways Bioinformatics Center at CCNY,
Sept. 2002 – Present Research Assistant Professor, Department of Chemistry, CCNY
Nov.1998--Aug. 2002 Research Associate, Cellular Biochemistry and Biophysics Program
Memorial Sloan-Kettering Cancer Center (MSKCC), New York
Feb.1996--Oct. 1998 Research Fellow, Cellular Biochemistry and Biophysics Program
Memorial Sloan-Kettering Cancer Center (MSKCC), New York

Research Interests:

Biomolecule structure determination using NMR and x-ray crystallography;
Structural bioinformatics and comparative genomics;
Science education: develop interdisciplinary curricula, bring research to classroom, promote early participation in research to increase learning motivation.

Relevant Peer-Reviewed Journal Publications:

12. C.D. Shaffer, **Y.Gosser**, et.al (from 15 institutes) and S. C.R. Elgin,
“The Genomics Education Partnership: Successful Integration of Research into Laboratory
Classes at a Diverse Group of Undergraduate Institutions” CBE Life Sci Educ, Vol 9, 55–69, 2010
11. Zhiqiang Liu, **Yuying Gosser**, Peter James Baker, Yaniv Ravee, Ziyang Lu, Girum Alemu, Huiguang
Li, Glenn L. Butterfoss, Xiang-Peng Kong, Richard Gross, and Jin Kim Montclare, “Structural and
Functional Studies of *Aspergillus oryzae* Cutinase: Enhanced Thermostability and Hydrolytic Activity
Of Synthetic Ester and Polyester Degradation”, *J.Am.Chem.Soc*, **131,15711-15716** (2009)
- 10.**Yuying Gosser**, Ziyang Lu, Girum Alemu, Huiguang Li, Xiangpong Kong, Zhiqiang Liu, Jin K.
Montclare, Richard Gross, "The coordinates and structure factors of *A.oryzae* Cutinase crystal" deposited to
Protein Data Bank, ID **3GBS**, March 2009.
- 9.Hashimi M. Al-Hashimi, Andrey Gorin, Ananya Majumdar, **Yuying Gosser**,and Dinshaw J. Patel,
Towards Structural Genomics of RNA: Rapid NMR resonance assignment and simultaneous RNA tertiary
structure determination using residual dipolar couplings. *J. Mol. Biology*, 318, 637-649 (2002).
- 8.Hashim M. Al-Hashimi, **Yuying Gosser**, Andrey Gorin, Weidong Hu, Ananya Majumdar & Dinshaw
Patel, Concerted Motions in HIV-1 TAR RNA allow access to bound state conformations. *J. Mol. Biology*
315, 95-102 (2002).
- 7.**Yuying Q. Gosser**, Thomas Hermann, Ananya Majumdar, Weidong Hu, Feng Jiang, Ronnie Frederick,
Weijung Xu & Dinshaw J. Patel, Peptide-Triggered Conformational Switch in the Rev-Binding Site of
HIV-1 RRE RNA. *Nature Structure Biology*, **8**, 146-150 (2001).

6. Ananya Majumdar, **Yuying Gosser** and Dinshaw Patel, ^1H - ^1H Correlation Across N-H...H Hydrogen Bonds in Nucleic Acids. *J. Biomol. NMR*, 4, 289-306 (2001).
5. Weidong Hu, **Yuying Q. Gosser**, Weijun Xu & Dinshaw J. Patel, Novel 2D and 3D multiple-quantum bi-directional HCNCH experiments for the correlation of ribose and base protons/carbons in $^{13}\text{C}/^{15}\text{N}$ labeled RNA. *J. Biomol. NMR*, 20, 167-172 (2001).
4. Weidong Hu, Licong Jiang and **Yuying Q. Gosser**, Sensitivity-Enhanced MQ-HCN- CCH-TOCSY and MQ-HCN-CCH-COSY Pulse Schemes for $^{13}\text{C}/^{15}\text{N}$ Labeled RNA Ologonucleotides. *J. Magn. Resonance* 104, 147-151 (2000).
3. **Yuying Q. Gosser**, Tyzoon K. Nomanbhoy, Behzad Aghazadeh, Danny Manor, Carolyn Combs, Richard A. Cerione, Michael K. Rosen, C-terminal binding domain of Rho GDP-dissociation inhibitor directs N-terminal inhibitory peptide to GTPases. *Nature*, 387, 814-819 (1997).
2. **Yuying Q. Gosser**, Jie Zheng, Michael Overduin, Bruce Mayer and David Cowburn, The Solution Structure of Abl SH3, and its relationship to SH2 in the SH(32) construct. *Structure*, 3, 1075-1086 (1995).
1. **Yuying Q. Gosser**, Kathleen P. Howard and James H. Prestegard, Three-Dimensional ^1H Detected ^{13}C - ^{13}C Correlated Experiments for Carbon Backbone Assignments of Enriched Natural Products. *J. Magn. Reson. Series B*, 101, 126-133 (1993).

Relevant conference presentations

7. Cheryl Mazzeo, Jane Akhuetie, Leslie Guadron, Nicole Clarke-Medley, Alen M. Sajan, Olivia Plante, Ziyang Lu, and **Yuying Gosser**, "Genomics Education Partnership- an Effective Approach to Prepare Students for Early Participation in Research", Poster presentation at the ASCB Annual Conference, Philadelphia, PA, December 11-15, 2010
6. Leslie Guadron, Alen M. Sajan, Olivia Plante, Stanley George, **Yuying Gosser**, "Genome Science Education for Engineering Majors", Mid-Atlantic Regional ASEE Conference at Villanova University, Villanova, PA 19085, October 15-16, 2010
5. Wenqian Qiu, Xinyang Wang, Ziyang Lu, Mila Susnjar, **Yuying Gosser**, "Mechanistic Study of the Inhibitory Function of Andrographolide to ERK Using Computer Modeling", Poster presentation at VIII European Symposium of Protein Society, June 13-17, 2009, Zurich, Austria
4. **Yuying Gosser**, Peter Brass, "Computer Reveals the Beauty of Mathematics and Molecular World" Poster presentation at New York Structural Biology Symposium at New York Academy of Science, August 2007.
3. **Yuying Gosser**, David Calhoun, David Gosser, "Summer Bioinformatics Workshop for Undergraduate Student at City College of New York", poster presentation at 19th Symposium of the Protein Society, Jul 30 - Aug. 3, 2005, Boston, MA
2. **Yuying Gosser**, "Bioinformatics workshop as a bridge to undergraduate research" - Oral presentation at the ACS 228th national meeting, Aug. 2004, Philadelphia, PA.
1. **Yuying Gosser**, Invited to chair the Bioinformatics Education Special Interest Group meeting at the Computational Systems Bioinformatics 2004 Conference, Aug. Stanford.

Science Education Activities and Service

1. Executive Editor of "Journal of Student Research" of The Grove School of Engineering, CCNY.
2. Director of the Pathways Bioinformatics & Biomolecular Center, which was dedicated to undergraduate research training, founded by HHMI science education program at CCNY.

3. Developed the interdisciplinary course ‘Bioinformatics & Biomolecular Systems’ in collaboration with biology and computer science faculty, taught pilot classes for college students and summer academy of advanced high school students since 2004.
4. Joined the nationwide Genomics Education Partnership (GEP) in 2008, and started the computer-based research oriented gene-annotation project to bring genome science research to college and high school classrooms.
5. Organized “CUNY Faculty/TA GEP workshop”, January 18-20, 2010, at CCNY, New York.
6. In collaboration with computer science faculty Peter Brass, developed the innovative course “Math, Art and Science”; organized “Art of Science & Engineering” student club and Annual exhibition since 2007.
7. Mentored Peer-Leaders in teaching the Genomics & Bioinformatics course and presented a poster at 2010 CCAPP poster session at CCNY: “Annotate Newly Sequenced Dot Chromosomes of *Drosophila Erecta* and *Mojavensis* -- A report from Peer Leaders”

Grant Support:

As PI: Carnegie Academy for the Scholarship of Teaching and Learning (CASTL), 2007-2008

The title: "Computer Graphics Reveals the Beauty of Mathematics & the Molecular World"

AS Co-PI: CUNY faculty development grant, 2007-2008

The title: "Explore the role of computer-based graphic art in teaching programming, geometry and molecular science"

As Co-PI: NYU-Polytech seed grant, 2009-2010,

The Title: Structural characterization & structure-based engineering of cutinase.

As PI: CCNY Institutional Proposal to NIST SURF program 2010

Served as the CCNY contact person for the NIST SURF program.

As key personnel in the following Science Education grants:

1. NSF STEP grant: Pathways to Interdisciplinary Science, Engineering and Mathematics (2003-2006)

Y. Q. Gosser (Senior Personnel), Director of the Pathways Bioinformatics Center at CCNY.

2. Howard Hughes Medical Institute education program at CCNY: Bridging undergraduate studies and interdisciplinary research in life sciences (2004-2008, extended to 2009)

Y. Q. Gosser (Key personnel), Director of the Pathways Bioinformatics & Biomolecular Center.

The title: Bridging undergraduate studies and interdisciplinary research in life sciences