

Curriculum Vitae

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Education:

1991-1994	University of Maryland	B.S. in Chemistry and Biochemistry
1994-2000	Stanford University	Ph.D. in Biochemistry

Experience:

1991-1994	Research with Dr. R. N. Armstrong, University of Maryland; Substrate specificity in Glutathione-S-Transferase.
1994-2000	Research with Dr. Daniel Herschlag, Stanford University; (1) Energetics of hydrogen bonds in model systems and implications for enzymatic catalysis; (2) Role of metal ions in catalysis of RNA enzymes.
2000-2005	Post-doctoral research with Dr. Peter Walter, U.C. San Francisco Mechanism of Signal Recognition Particle-dependent protein targeting
2005-	Assistant Professor, California Institute of Technology

Honors

1992	CRC Freshman Chemistry Achievement Award
1998-1999	Lieberman Fellowship for Graduate Research
1999	Charles Yanofsky Graduate Research Award
2000-2003	Cancer Research Fund Fellowship of the Damon Runyon-Walter Winchell Foundation
2003-present	Burroughs Wellcome Fund Fellowship
2005	Camille and Henry Dreyfus New Faculty Award

Publications

1. Shan, S. and Walter, P. (2005) *Biochemistry* **44**, 6214-6222. "Molecular Crosstalk between the nucleotide specificity determinant of the SRP GTPase and the SRP Receptor".
2. Shan, S. and Walter, P. (2005) *FEBS Letters* **579**, 921-926. "Co-translational protein targeting by the signal recognition particle".
3. Chu, F., Shan, S., Moustakas, D.T., Alber, F., Egea, F., Stroud, R.M., Walter, P., and Burlingame, A.L. (2004) *Proc. Natl. Acad. Sci. U. S. A.* **101**, 16454-16459. "Unraveling the interface of signal recognition particle and its receptor by using chemical cross-linking and tandem mass-spectrometry".
4. Shan, S. Stroud, R.M., and Walter, P. (2004) *PLOS Biology* **2**, e320. "Mechanism of Association and Activation between Two GTPases".
5. Egea, P.F., Shan, S., Napetschnig, J., Savage, D.F., Walter, P., and Stroud, R.M. (2004) *Nature* **427**, 215-221. "Substrate twinning activates the signal recognition particle and its receptor".
6. Shan, S. and Walter, P. (2003) *Proc. Natl. Acad. Sci. U. S. A.* **100**, 4480 – 4485. "Induced Nucleotide Specificity in a GTPase"
7. Shan, S., and Herschlag, D. (2002) *RNA* **8**, 861-872. "Dissection of a Metal Ion Mediated Conformational Change in *Tetrahymena* Ribozyme Catalysis"
8. Peluso, P., Shan, S., Nock, S. Herschlag, D., and Walter, P. (2001) *Biochemistry* **40**, 15224-15233. "Role of SRP RNA in the GTPase Cycles of Ffh and FtsY"
9. Shan, S., Kravchuk, A.V., Piccirilli, J.A., and Herschlag, D. (2001) *Biochemistry* **40**, 5161-5171. "Defining the Catalytic Metal Ion Interactions in the *Tetrahymena* Ribozyme Catalysis"
10. Shan, S., and Herschlag, D. (2000) *RNA* **6**, 795-813. "An unconventional origin of metal-ion rescue and inhibition in the *Tetrahymena* group I ribozyme reaction"
11. Yoshida, A.*, Shan, S.*, Herschlag, D., and Piccirilli, J.A. (1999) *Chem. Biol.* **7**, 85-96. "The Role of the Cleavage Site 2'-Hydroxyl in the *Tetrahymena* Group I Ribozyme Reaction" *These authors contributed equally to this work.
12. Shan, S., Yoshida, A., Sun, S., Piccirilli, J.A. and Herschlag, D. (1999) *Proc. Natl. Acad. Sci. U. S. A.* **96**, 12299-12304. "Three Metal Ions at the Active Site of the *Tetrahymena* Group I Ribozyme"
13. Shan, S., Narlikar, G.J. and Herschlag, D. (1999) *Biochemistry* **38**, 10976-10988. "Protonated 2'-Aminoguanosine as a Probe of the Electrostatic Environment of the Active Site of the *Tetrahymena* Group I Ribozyme"

14. Shan, S. and Herschlag, D. (1999) *Biochemistry* **38**, 10958-10975. "Probing the Role of Metal Ions in RNA Catalysis: Kinetic and Thermodynamic Characterization of a Metal Ion Interaction with the 2'-Moiety of the Guanosine Nucleophile in the *Tetrahymena* Group I Ribozyme"
15. Shan, S. and Herschlag, D. (1999) in *Methods in Enzymology*, vol **308**, part E, ed. V. Schramm & D. L. Purich, Academic Press, New York. pp246-275. "Hydrogen Bonding in Enzymatic Catalysis: Analysis of Energetic Contributions"
16. Shan, S. and Herschlag, D. (1996) *Proc. Natl. Acad. Sci. U. S. A.* **93**, 14474-14479. "The Change in Hydrogen Bond Strength Accompanying Charge Rearrangement: Implications for Enzymatic Catalysis"
17. Shan, S. and Herschlag, D. (1996) *J. Am. Chem. Soc.* **118**, 5515-5518. "Energetic Effects of Multiple Hydrogen Bonds. Implications for Enzymatic Catalysis"
18. Shan, S., Loh, S. and Herschlag, D. (1996) *Science* **272**, 97-101. "The Energetics of Hydrogen Bonds in Model Systems. Implications for Enzymatic Catalysis"
19. Shan, S. and Armstrong, R.N. (1994) *J. Biol. Chem.* **269**, 32373-32379. "Rational Reconstruction of the Active Site of a Class Mu Glutathione S-Transferase"
20. Zhang, P., Liu, S., Shan, S., Ji, X., Gilliland, G.L. and Armstrong, R.N. (1992) *Biochemistry* **31**, 10185-10193. "Modular Mutagenesis of Exons 1, 2, and 8 of a Glutathione S-Transferase from the Mu Class: Mechanistic and Structural Consequences from Chimeras of Isoenzyme 3-3"