4-12-2024

Eggers, Daryl K.

San Jose State University

DARYL K. EGGERS

Curriculum Vitae

E-mail: daryl.eggers@sjsu.edu
Web: http://www.sjsu.edu/eggers/

Department of Chemistry
San José State University
One Washington Square
San José, CA 95192-0101

Education

B.S. Chemical Engineering, Rose-Hulman Inst. Technol., Terre Haute, IN 1977 - 1981

M.S. Chemical Engineering, University of California, Berkeley 1984 - 1987
Thesis: *Extractive Catalysis: Enzymatic Production of Tryptophan in Two-Phase Systems*
Advisor: Harvey W. Blanch, Department of Chemical Engineering

Ph.D. Pharmacology, University of California, San Francisco 1990 - 1997
Thesis: *Characterization of Nascent Polypeptides and their Molecular Chaperones in Mammalian Cells*
Chair: William J. Welch, Lung Biology Center, San Francisco General Hospital
Committee: Irwin D. Kuntz and Vishwanath R. Lingappa

Postdoctoral Fellow University of California, Los Angeles 1997 - 2002
Research: Use of Sol-Gel Encapsulation to Mimic Molecular Crowding
Mentor: Joan S. Valentine, Department of Chemistry and Biochemistry

Positions and Honors

Employment

2023 -	Professor Emeritus, Department of Chemistry, San José State University
2013 - 2023	Professor, Department of Chemistry, San José State University
2015 - 2016	Visiting Research Scientist, Rensselaer Polytechnic Institute (sabbatical)
2008 - 2013	Associate Professor, Department of Chemistry, San José State University
2002 - 2008	Assistant Professor, Department of Chemistry, San José State University
1998 & 1999	Summer Lecturer, Biochemistry, UCLA
1997 - 2002	Postdoctoral Research Fellow, UCLA
1987 - 1990	Chemist II, Syntex Research, Palo Alto, CA
1981 - 1984	Associate Engineer, M.W. Kellogg Company, Houston, TX

Honors

2008	Early Career Investigator Award, SJSU Research Foundation
2000	Award of Excellence, Chem & Biochem Advances in Research Forum, UCLA
1999 - 2002	Fellow of the American Cancer Society

Active Professional Memberships

1990 - present	Member, American Chemical Society
1999 - present	Member, Biophysical Society

Selected Publications

1. Harmon, C., Bui, A., Espejo, J.M., Gancayco, M., Le, J.M., Rangel, J., and D.K. Eggers: Solvation free energy in governing equations for DNA hybridization, protein–ligand binding, and protein folding. *bioRxiv* (2024); DOI: 10.1101/2024.03.15.585270 (open access).

2. Eggers, D.K., Le, J.M., Nham, N.T., Pham, D.N., and B.M. Castellano: Dual effect of secondary solutes on binding equilibria: Contributions from solute–reactant interactions and solute–water interactions. *ACS Omega* 9:3017-3027 (2024). DOI: 10.1021/acsomega.3c09329 (open access).

3. Eggers, D.K., Brewer, A., Cacatian, K.J., Camat, L.A., Castagnoli, D., Chuang, N., Chung, L.N., Do, T., Huynh, E., Jenpichitkulchai, T., Kaur, A., Le, F., Ong, R., Pham, D., and K. Shao: Model binding experiments with cucurbit[7]uril and *p*-sulfonatocalix[4]arene support use of explicit solvation term in governing equation for binding equilibria. *Supramol. Chem.* 34:94-104 (2023); DOI: 10.1080/10610278.2023.2254442 (open access).

4. Eggers, D.K., Fu, S., Ngo, D.V., Vuong, E.H., and T. Brotin: Thermodynamic contribution of water in cryptophane host–guest binding reaction. *J. Phys. Chem. B* 124:6585-6591 (2020).

5. Castellano, B.M., and D.K. Eggers: Experimental support for a desolvation energy term in governing equations for binding equilibria. *J. Phys. Chem. B* 117:8180-8188 (2013).

6. Payumo, A.Y., Huijon, R.M., Mansfield, D.D., Belk, L.M., Bui, A.K., Knight, A.E., and D.K. Eggers: Changes in apparent molar water volume and DKP solubility yield insights on the Hofmeister effect. *J. Phys. Chem. B* 115:14784-14788 (2011).

7. Eggers, D.K.: A bulk water-dependent desolvation energy model for analyzing the effects of secondary solutes on biological equilibria. *Biochemistry* 50:2004-2012 (2011).

8. Eggers, D.K., and J.S. Valentine: Crowding and hydration effects on protein conformation: a study with sol-gel encapsulated proteins. *J. Mol. Biol*. 314:911-922 (2001).

9. Eggers, D.K., W.J. Welch, and W.J. Hansen: Complexes between nascent polypeptides and their molecular chaperones in the cytosol of mammalian cells. *Mol. Biol. Cell* 8:1559-1573 (1997).

10. Eggers, D.K., H.W. Blanch, and J.M. Prausnitz: Extractive catalysis: solvent effects on equilibria of enzymatic reactions in two-phase systems. *Enzyme Microb. Technol.* 11:84-89 (1989).

External Grant History

	Award Period
Keck Foundation, L.Cheruzel (PI) Co-PIs: D.Eggers, L.Miller Conrad, A.Rascón *SJSU FIRES: Freshman Initiative for Research to Engage Students* Funding: $325,000 over 3 years + 1-yr COVID extension	07/01/18 - 06/31/22
R15 GM110654, Eggers (PI) NIH, NIGMS *Role of Desolvation Energy in Model Biological Reactions* Funding: $200,000 over 3 years + 1-yr no-cost extension	05/01/15 - 04/30/19
DBI-1427465, Eggers (PI) Co-PIs: A.A. Rascón (Chemistry) and E. Skovran (Biology) NSF, Division of Biological Infrastructure *MRI: Acquisition of a Microscale Thermophoresis Instrument* Funding: $150,511	08/01/14 - 07/31/17

DMR-1005442, Eggers (PI) 07/15/10 - 06/30/14
NSF, Division of Materials Research, Biomaterials Program
RUI: Silica-Based Materials with Improved Biocompatibility
Funding: $240,000 over 3 years + 1-yr no-cost extension

SC3 GM089591, Eggers (PI) 01/01/10 - 12/31/13
NIH, NIGMS
A New Interpretation of Solute Effects on Biological Equilibria
Funding: ~$424,000 over 4 years

CHE-0723278, Eggers (PI) 08/01/07 - 07/31/10
Co-PI's: Collins (SJSU), Gassner (SFSU), Subramaniam (U Santa Clara), Whiles-Lillig (Sonoma St.)
NSF, Division of Chemistry
MRI: Acquisition of an Isothermal Titration Calorimeter and a Differential Scanning Calorimeter
Funding: $183,488

S06 GM008192, Eggers (subproject PI) 01/01/06 - 12/31/09
NIH, NIGMS
Intermediate States of Aggregation-prone Polypeptides
Funding: $719,166 over 4 years

Courses Taught

SJSU:	Chem 130A	Biochemistry (1st semester)
	Chem 130B	Biochemistry (2nd semester)
	Chem 132	Introductory Biochemistry (non-science majors)
	Chem 132L	Introductory Biochemistry Laboratory
	Chem 135	General Biochemistry (biology majors)
	Chem 236	Biophysical Methods (graduate course)
	Chem 270	Adv Chem: Protein Folding (graduate course)
UCLA:	Chem 153C	Biochemistry (3rd quarter - metabolism)

Selected Service Activities

Biophysical Society:
- Biopolymers in Vivo Subgroup:
  - *Member-at-Large*, 2013-15
  - *Secretary/Treasurer*, 2015-19
  - *Chair Elect*, 2024
- Committee on Inclusion and Diversity (CID):
  - *Member,* 2017-23
  - *Vice-Chair*, 2018-22

CSUBIOTECH (formerly known as the CSU Program for Education and Research in Biotechnology):
- Faculty Consensus Group, 2007-23
- Strategic Planning Council, 2009-19

SJSU University Library Board:
- *Member,* 2012-15
- *Chair,* 2013-14 and 2014-15