Dave Y. Song

Assistant Professor of Chemistry
Department of Chemistry, Pacific Lutheran University
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PROFESSIONAL APPOINTMENTS

Assistant Professor of Chemistry 2024–Present
Pacific Lutheran University, Tacoma, WA

Postdoctoral Fellow in Chemistry and Chemical Biology 2024
Advisor: Prof. Daniel G. Nocera
Harvard University, Cambridge, MA

EDUCATION

Ph.D. in Chemistry and Chemical Biology 2024
Harvard University, Cambridge, MA

A.M. in Chemistry and Chemical Biology 2014
Harvard University, Cambridge, MA

B.S. in Chemistry and Molecular & Cellular Biology 2010
University of Illinois at Urbana-Champaign, Urbana, IL

RESEARCH EXPERIENCE

Graduate Research Fellow, Harvard University 2011–2016, 2021–Present
Advisor: Prof. Daniel G. Nocera
Co-Advisor: Prof. JoAnne Stubbe, MIT
Thesis: Radical Transport at the Subunit Interface of Ribonucleotide Reductase

Visiting Student Research, MIT 2013–2015
Advisor: Prof. JoAnne Stubbe

Laboratory Research Assistant, UIUC 2010–2011
Advisor: Prof. Wilfred A. van der Donk

Chemistry Education Consultant, UIUC 2009–2011
Advisor: Prof. Jeffrey S. Moore

Undergraduate Research Assistant, UIUC 2008–2010
Advisor: Prof. Kannanganattu V. Prasanth
Thesis: SRSF1 Regulates the Assembly of Pre-mRNA Processing Factors in Nuclear Speckles

TEACHING EXPERIENCE

Bok Pedagogy Fellow in STEM, Harvard University 2023–2024
The Derek Bok Center for Teaching and Learning

Pedagogy Fellow in Chemistry and Chemical Biology Harvard University 2022–2023
CHEM 301 – Scientific Teaching and Communications: Practicum, Department of Chemistry and Chemical Biology, The Derek Bok Center for Teaching and Learning

Assistant Professor of Chemistry, Southwestern College (SWC) 2019
Temporary Academic Faculty, Southwestern Community College District

Chemistry Instructor, SWC 2019
CHEM 100 – Introduction to General Chemistry

Chemistry Instructor, SWC 2018–2019
CHEM 170 – Preparation for General Chemistry

Physical Science Director, Holy Martyrs Ferrahian Secondary School 2016–2017
8th grade Physical Science, 10th grade Advanced Chemistry, 11th grade AP Chemistry

Teaching Fellow, Harvard University 2014
Life and Physical Sciences A

Howard Hughes Medical Institute Teaching Assistant Fellow, MIT 2011–2012
Course 5.111 – Principles of Chemical Science

Co-Instructor, UIUC 2010–2011
CHEM 332 – Elementary Organic Chemistry II

Undergraduate Teaching Assistant, UIUC 2010
CHEM 332 – Elementary Organic Chemistry II

Supplemental Instruction (SI) Leader, UIUC 2009
CHEM 332 – Elementary Organic Chemistry II

DISTINCTIONS

Student Recognition of Teaching Certificate, Harvard University 2022
National Science Foundation Graduate Research Fellowship 2013
Department of Chemistry Award for Outstanding Teaching, MIT 2012
Howard Hughes Medical Institute Teaching Assistant Fellowship, MIT 2011
Lewis Paul Chapin Fellowship, MIT 2011

PUBLICATIONS

1. **Song, D. Y.**; Stubbe, J., Nocera, D.G. Protein engineering a PhotoRNR chimera based on a unifying evolutionary apparatus among the natural classes of ribonucleotide reductases. *Proc. Natl. Acad. Sci. USA.* **2024**, *121*, e2317291121.
2. Cui, C.; **Song, D. Y.**; Drennan, C. L.; Stubbe, J.; Nocera, D. G. Radical Transport Facilitated by a Proton Transfer Network at the Subunit Interface of Ribonucleotide Reductase. *J. Am. Chem. Soc.* **2023**, *145*, 5145–5154.
3. **Song, D. Y.**; Pizano, A. A.; Holder, P. G.; Stubbe, J.; Nocera, D. G. Direct interfacial Y_{731} oxidation in α_2 by a photoβ_2 subunit of *E. coli* class Ia ribonucleotide reductase. *Chem. Sci.* **2015**, *6*, 4519–4524.
4. Tripathi, V.[1]; **Song, D. Y.[1]**; Zong, X.; Shevtsov, S. P.; Hearn, S.; Fu, X. D.; Dundr, M.; Prasanth, K. V. SRSF1 regulates the assembly of pre-mRNA processing factors in nuclear speckles. *Mol. Biol. Cell* **2012**, *18*, 3694–706; [1]Authors contributed equally to this work.
5. Tripathi, V.; Ellis, J. D.; Shen, Z.; **Song, D. Y.**; Pan, Q.; Watt, A. T.; Freier, S. M.; Bennett, C. F.; Sharma, A.; Bubulya, P. A.; Blencowe, B. J.; Prasanth, S. G.; Prasanth, K. V. The Nuclear-Retained Noncoding RNA MALAT1 Regulates Alternative Splicing by Modulating SR Splicing Factor Phosphorylation. *Mol. Cell* **2010**, *39*, 925–938.

PRESENTATIONS

- Jane Fu*, Nejc Nagelj*, **David Song****, JoAnne Stubbe**, Daniel G. Nocera. "Fluorinated tyrosines (Y) and tryptophans (W): Probes of the radical transfer process in class Ia *E.coli* ribonucleotide reductase (RNR)." *American Chemical Society: Many Flavors of Chemistry. Symposium to Celebrate 2024 ACS National Award for Creative Work in Fluorine Chemistry.* 19 Mar. 2024. *presenters, **speakers.
- Daniel G. Nocera*, Chang Cui**, **David Song****, Jane Fu**, Nejc Nagelj**, JoAnne Stubbe**. "Radical transport pathway of ribonucleotide reductase." *Northeast Regional Meeting of the American Chemical Society (NERM 2023) Boston: Chemistry: Crossing Intersections*. 16 Jun. 2023. *presenter, **authors.
- Jane Fu*, **David Y. Song****, Daniel G. Nocera**. "PCET in Ribonucleotide Reductase, Synthesis and Electrochemistry of Unnatural Tryptophan Analogues." *Canadian Chemistry Conference and Exhibition (CSC 2023).* 5 Jun. 2023. *presenter, **authors.
- Daniel G. Nocera*, Chang Cui**, **David Song****, JoAnne Stubbe**. "Proton transfer network at the subunit interface of ribonucleotide reductase supports radical transport." *ACS Spring 2023: Crossroads of Chemistry*. 28 Mar. 2023. *presenter, **speakers.
- *Moore, Jeffrey and ****Song, David**. "College Coaching for Training 21st Century Minds." *TEDxUIUC: New Frontiers*. 24 Mar. 2011. Web. 30 Nov. 2015. *presenter, **creator of presentation video segments.

PUBLIC RELATIONS

- *Quantifying Chemical Reactions – Stoichiometry and Moles.* Prod. Tobias McElheny. Perf. **David Song**. *Annenberg Learner Foundation*. Harvard-Smithsonian Center for Astrophysics, 26 June 2013. Web. 30 Nov. 2015.

- Yates, Diana. "Cancer-associated long non-coding RNA regulates pre-mRNA splicing." *Inside Illinois*. **October 7, 2010**. Page 7.

MENTORSHIP AND STUDENT ADVANCEMENT

Harvard University
Andrew S., Neuroscience Observership, Massachusetts General Hospital – Neurosurgery Department – Dr. Robert Martuza, Chief, Neurosurgical Service
Chris K., Surgical Observership, Wellstar Kennestone Hospital
Tania F., MD-PhD Undergraduate Summer (MPUS) Fellowship Program, Dartmouth
Maya B., Undergraduate Research Assistant, Nocera Lab
Jane F., Graduate Student Researcher, Nocera Lab
Nejc. N., Graduate Student Researcher, Nocera Lab

Massachusetts Institute of Technology
Hyunjii (Justina) C., Fulbright Scholar – Max Planck Institute for Infection Biology, Berlin, Germany; Harvard T.H. Chan – School of Public Health
James S., Merck Engineering and Technology Fellowship Program
Jessica S., MISTI (MIT International Science and Technology Initiatives) – Israel

University of Illinois at Urbana-Champaign
Sara T., Graduate Student, University of California, Berkeley – Department of Chemistry
Matthew G., Graduate Student, Feinberg School of Medicine – Northwestern, Physical Therapy & Human Movement Sciences
Kyu-An K., Medical Student, New York University College of Dentistry
Nilly H., Medical Student, University of Illinois College of Medicine
Meagen W., Medical Student, Rush Medical College
Julie M., Medical Student, Rush Medical College
Huzefa C., Medical Student, Chicago Medical School at Rosalind Franklin
Sarah K., Medical Student, Chicago Medical School at Rosalind Franklin
Corey S., Study Abroad Program, Spain
Stephanie S., Internship, Poison Control Center

Southwestern College
Nicole S., Peer Study Program Tutor, Southwestern College

LEADERSHIP, SERVICE, and COMMUNITY

Undergraduate Research Symposium Poster Session Referee, Harvard University Department of Chemistry and Chemical Biology 2024

Microteaching and Problem-Based Discussion Facilitator, Harvard University Practice Teaching Sessions for New TFs, Fall Teaching Conference, The Derek Bok Center for Teaching and Learning 2023

Teaching and Outreach Panel for Prospective Students, Harvard University Department of Chemistry and Chemical Biology 2023

Microteaching and Problem-Based Discussion Facilitator, Harvard University 2022
Practice Teaching Sessions for New TFs, Fall Teaching Conference, The Derek Bok Center for Teaching and Learning

Part-Time Faculty Senator, SWC 2019
Academic Senate, Southwestern College, Department of Mathematics, Science, and Engineering

Faculty Facilitator, SWC 2019
Introduction to Chemistry Workshop Series, Power Study Program (PSP)

Scholarship Reader Volunteer, SWC 2019
Southwestern College Foundation

Alumni Interviewer, Harvard Club of San Diego 2019
Harvard College Alumni Interviewing Program–Class of 2023

Golf Club President, Holy Martyrs *Ferrahian Secondary* School 2016–2017

Chemistry: Challenges and Solutions Video Host, Annenberg Learner Foundation 2014
"Quantifying Chemical Reactions – Stoichiometry and Moles"
Harvard Smithsonian Center for Astrophysics

Harvard Professions Recruitment & Exposure Program (HPREP), Harvard Medical School, Boston, MA 2013

Cambridge Science Festival Booth Demonstrator, Cambridge, MA 2012

Micro-teaching TA Training Facilitator, MIT 2012

DOW-MIT ACCESS Program, MIT 2011