

# CURRICULUM VITAE

## 1. Name

### Gerwald Jogl

Associate Professor of Biology

Brown University

Department of Molecular Biology, Cell Biology and Biochemistry

## 2. Education

Undergraduate/Graduate:

Mentor: Christoph Kratky

1994 Mag. rer. nat. (M.Sc.) Chemistry  
Karl Franzens Universität Graz, Austria

1999 Dr. rer. nat. (Ph.D.) Chemistry  
Karl Franzens Universität Graz, Austria  
Dissertation Title: X-ray and neutron diffraction studies of B12 co-enzymes in free and enzyme-bound state.

Postgraduate:

Mentor: Liang Tong

1999 – 2004 Postdoctoral Research Associate  
Columbia University, New York

## 3. Professional Appointments

2011 – present Associate Professor, Brown University

2004 – 2011 Assistant Professor, Brown University

## 4. Completed Publications

### 4a. Refereed journal articles

1. Fernandezgalan R, Jalon FA, Manzano BR, Rodriguezdelafuente J, Vrahami M, Jedlicka B, Weissensteiner W, **Jogl G**; New chiral Palladium(0) and Palladium(II) complexes of (aminoferrocenyl)phosphine ligands Ppfa and Ptfa - X-ray crystal structure analysis and fluxional behavior involving alkene rotation, Pd-N bond rupture, and selective eta(3)-eta(1)-eta(3) allyl isomerization. **Organometallics** 16, 17, 3758-3768 (1997).
2. Reitzer R, Krasser M, **Jogl G**, Buckel W, Bothe H, Kratky C; Crystallization and preliminary X-ray analysis of recombinant glutamate mutase and of the isolated component S from *Clostridium cochlearium*. **Acta Cryst. D** 54, 1039-1042 (1998).
3. Langan P, Lehmann M, Wilkinson C, **Jogl G**, Kratky C; Neutron Laue diffraction studies of coenzyme cob(II)alamin. **Acta Cryst. D** 55, 51-59 (1998).

4. Reitzer R, Gruber K, **Jogl G**, Wagner UG, Bothe H, Buckel W, Kratky C; Glutamate mutase from *Clostridium cochlearium*: the structure of a coenzyme B<sub>12</sub>-dependent enzyme provides new mechanistic insights. **Structure** 7, 891-902 (1999).
5. Champloy F, **Jogl G**, Reitzer R, Buckel W, Bothe H, Michalowicz A, Meyer-Klaucke W, Kratky C; EXAFS data support a short axial cobalt-nitrogen bond of the B<sub>12</sub> cofactor in the two coenzyme B<sub>12</sub>-dependent enzymes glutamate mutase and 2-methyleneglutarate mutase. **J. Amer. Chem. Soc.** 121, 11780-11789 (1999).
6. Champloy F, Gruber K, **Jogl G**, Kratky C; XAS spectroscopy reveals X-ray-induced photoreduction of free and protein-bound B<sub>12</sub> cofactors. **J. Synch. Rad.** 7, 267-273 (2000).
7. Rozovsky S, **Jogl G**, Tong L, McDermott AE; Solution-state NMR investigations of triosephosphate isomerase active site loop motion: ligand release in relation to active site loop dynamics. **J. Mol. Biol.** 310, 271-280 (2001).
8. **Jogl G**, Tao X, Xu YW, Tong L; COMO: a program for combined molecular replacement. **Acta Cryst. D** 57, 1127-1134 (2001).
9. **Jogl G**, Shen Y, Gebauer D, Li J, Wiegmann K, Kashkar H, Kronke M, Tong L; Crystal structure of the BEACH domain reveals an unusual fold and extensive association with a novel PH domain. **EMBO J.** 21, 18, 4785-4795 (2002).
10. **Jogl G**, Rozovsky S, McDermott AE, Tong L; Optimal alignment for enzymatic proton transfer: Structure of the Michaelis complex of triosephosphate isomerase at 1.2 Å resolution. **Proc. Natl. Acad. Sci. USA** 100, 1, 50-55 (2003).
11. **Jogl G**, Tong L; Crystal structure of carnitine acetyltransferase and implications for the catalytic mechanism and fatty acid transport. **Cell** 112, 113-122 (2003).
12. Gobin S, Thuillier L, **Jogl G**, Faye A, Tong L, Chi M, Bonnefont JP, Girard J, Prip-Buus C; Functional and structural basis of carnitine palmitoyltransferase 1A deficiency. **J. Biol. Chem.** 278, 50428-50434 (2003).
13. **Jogl G**, Tong L; Crystal structure of yeast acetyl-coenzyme A synthetase in complex with AMP. **Biochemistry** 43, 1425-1431 (2004).
14. Hsiao Y, **Jogl G**, Tong L; Structural and biochemical studies of the substrate selectivity of carnitine acetyltransferase. **J. Biol. Chem.** 279, 31584-31589 (2004).
15. Gebauer D, Li J, **Jogl G**, Tong L; Crystal structure of the PH-BEACH domain of human LRBA/BGL. **Biochemistry** 43, 14873-14880 (2004).
16. **Jogl G**, Hsiao Y, Tong L; Crystal structure of mouse carnitine octanoyltransferase and molecular determinants of substrate selectivity. **J. Biol. Chem.** 280, 738-744 (2005).
17. Hsiao YS, **Jogl G**, Esser V, Tong L; Crystal structure of rat carnitine palmitoyltransferase II (CPT-II). **Biochem. Biophys. Res. Comm.** 346, 974-980 (2006).

18. Hsiao YS, **Jogl G**, Tong L; Crystal structures of murine carnitine acetyltransferase in ternary complexes with its substrates. **J. Biol. Chem.** 281, 28480-28487 (2006).
19. Holmes W and **Jogl G\***; Crystal structure of inositol phosphate multikinase 2 and implications for substrate specificity. **J. Biol. Chem.** 281, 38109-38116 (2006).
20. Demirci H, Gregory S, Dahlberg A, **Jogl G\***; Recognition of ribosomal protein L11 by the protein trimethyltransferase PrmA. **EMBO J.** 26, 567-577 (2007).
21. Li H and **Jogl G\***; Crystal structure of the zinc-binding transport protein ZnuA from *Escherichia coli* reveals an unexpected variation in metal coordination. **J. Mol. Biol.** 368, 1358-1366 (2007).
22. You Z, Omura S, Ikeda H, Cane DE, **Jogl G\***; Crystal structure of the non-heme iron dioxygenase PtlH in pentalenolactone biosynthesis. **J. Biol. Chem.** 282, 36552-36560 (2007).
23. Demirci H, Gregory ST, Dahlberg AE, **Jogl G\***; Multiple site trimethylation of ribosomal protein L11 by the PrmA methyltransferase. **Structure** 16, 1059-1066 (2008).
24. Demirci H, Gregory ST, Dahlberg AE, **Jogl G\***; Crystal structure of the *Thermus thermophilus* 16S rRNA methyltransferase RsmC in complex with cofactor and substrate guanosine. **J. Biol. Chem.** 283, 26548-26556 (2008).
25. Li H & **Jogl G\***; Structural and biochemical studies of TIGAR (*TP53*-Induced Glycolysis and Apoptosis Regulator). **J. Biol. Chem.** 284, 1748-1754 (2009).
26. Demirci H, Belardinelli R, Seri E, Gregory ST, Gualerzi C, Dahlberg AE, **Jogl G\***; Structural rearrangements in the active site of the *Thermus thermophilus* 16S rRNA methyltransferase KsgA in a binary complex with 5'-methylthioadenosine. **J. Mol. Biol.** 388, 271-282 (2009).
27. Gregory ST, Demirci H, Belardinelli R, Monshupanee T, Gualerzi C, Dahlberg AE, **Jogl G\***; Structural and functional studies of the *Thermus thermophilus* 16S rRNA methyltransferase RsmG. **RNA** 15, 1693-1704 (2009).
28. Demirci H, Larsen HGL, Hansen T, Rasmussen A, Cadambi A, Gregory ST, Kirpekar F\*, **Jogl G\***; Multi-site specific 16S rRNA methyltransferase RsmF from *Thermus thermophilus*. **RNA** 16, 1584-1596 (2010).
29. Demirci H, Murphy IV FV, Belardinelli R, Kelley AC, Ramakrishnan V, Gregory ST, Dahlberg AE, **Jogl G\***; Modification of 16S ribosomal RNA by the KsgA methyltransferase restructures the 30S subunit to optimize ribosome function. **RNA** 16, 2319-2324 (2010).
30. **Jogl G**, Wang X, Mason SA, Kovalevsky A, Mustyakimov M, Fisher Z, Hoffman C, Kratky C, Langan P; High-resolution neutron crystallographic studies of the hydration of the coenzyme cob(II)alamin. **Acta Cryst. D** 67, 584-591 (2011).
31. Larsen LH, Rasmussen A, Giessing AM, **Jogl G\***, Kirpekar F\*; Identification and characterization of the *Thermus thermophilus* m5C methyltransferase modifying 23S rRNA base C1942. **J. Biol. Chem.** 287, 27593-27600 (2012).

32. Li H and **Jogl G\***; Crystal structure of decaprenylphosphoryl- $\beta$ -D-ribose 2'-epimerase from *Mycobacterium smegmatis*. **Proteins**, 81(3), 538-543 (2013).
33. Demirci H, Murphy IV FV, Murphy EL, Gregory ST, Dahlberg AE, **Jogl G\***; A structural basis for streptomycin-induced misreading of the genetic code. **Nature Comms.** 4, 1355 (2013).
34. Demirci H\*, Sierra R, Laksmono H, Shoeman RL, Botha S, Barends TRM, Nass K, Schlichting I, Doak RB, Gati C, Williams GJ, Boutet S, Messerschmidt M, **Jogl G**, Dahlberg AE, Gregory ST, Bogan MJ; Serial femtosecond X-ray diffraction of 30S ribosomal subunit microcrystals in liquid suspension at ambient temperature using an X-ray free electron laser. **Acta Cryst. F** 69, 1066-9 (2013).
35. Demirci H, Wang L, Murphy IV FV, Murphy EL, Carr JF, Blanchard SC, **Jogl G**, Dahlberg AE, Gregory ST\*; The central role of protein S12 in organizing the structure of the decoding site of the ribosome. **RNA** 19(12), 1791-801 (2013).
36. Demirci, H, Murphy IV FV, Murphy EL, Connetti JL, Dahlberg AE, **Jogl G**, Gregory ST\*; Structural analysis of base substitutions in *Thermus thermophilus* 16S rRNA conferring streptomycin resistance. **Antimicrob. Agents Chemotherapy** 58(8), 4308-17 (2014).
37. Gregory ST\*, Connetti JL, Carr JF, **Jogl G**, Dahlberg AE; Phenotypic interactions among mutations in a *Thermus thermophilus* 16S rRNA gene detected with genetic selections and experimental evolution. **J. Bact.** 196(21), 3776-83 (2014).
38. Carr J, Lee H, Jaspers J, Dahlberg A, **Jogl G**, Gregory ST\*; Phenotypic suppression of streptomycin-resistance by mutations in multiple components of the translation apparatus. **J. Bact.** 197(18), 2981-8 (2015).
39. Kuzu G, Kaye EG, Chery J, Siggers T, Yan L, Dobson J, Boor S, Bliss J, Liu W, **Jogl G**, Rohs R, Singh ND, Bulyk ML, Tolstorukov MY, Larschan E\*; Expansion of GA dinucleotide repeats increases the density of CLAMP binding sites in the X-chromosome to promote Drosophila dosage compensation. **PLOS Genet.** 12(7): e1006120 (2016).
40. Duan L, **Jogl G\***, Cane D\*; The cytochrome P450-catalyzed oxidative rearrangement in the final step of pentalenolactone biosynthesis: substrate structure determines mechanism. **JACS** 138(38), 12678-89 (2016).
41. East K, Newton JC, Morzan UN, Narkhede YB, Acharya A, Skeens E, **Jogl G**, Batista VS, Parlermo G, Lisi GP\*; Allosteric motions of the CRISPR-Cas9 HNH Nuclease Probed by NMR and molecular dynamics. **JACS** 142(3), 1348-58 (2020).
42. Killeavy EE, **Jogl G**, Gregory ST; Tiamulin-resistant mutants of the thermophilic bacterium *Thermophilus thermophilus*. **Antibiotics (Basel)** 9(6):313, DOI:10.3390/antibiotics9060313 (2020).
43. Murphy EL, Singh KV, Avila B, Kleffmann T, Gregory ST, Murray BE, Krause KL\*, Khayat R\*, **Jogl G\***; Cryo-electron microscopy structure of the 70S ribosome from *Enterococcus faecalis*. **Sci Rep** 10(1):16301, DOI: 10.1038/s41598-020-73199-6 (2020).

44. Newton JC, Naik MT, Li GY, Murphy EL, Fawzi NL, Sedivy JM, **Jogi G\***; Phase separation of the LINE-1 ORF1 protein is mediated by the N-terminus and coiled-coil domain. **Biophys J**, 120(11):2181-2191, DOI: 10.1016/j.bpj.2021.03.028 (2021).
45. Silvia S, Donahue SA, Killeavy EE, **Jogi G**, Gregory ST; A survey of spontaneous antibiotic-resistant mutants of the halophilic, thermophilic bacterium *Rhodothermus marinus*. **Antibiotics (Basel)**, 10(11), DOI: 10.3390/antibiotics10111384 (2021).
46. Belato HB, D'Ordine AM, Nierzwicki L, Arantes PR, **Jogi G**, Palermo G, Lisi GP; Structural and dynamic insights in the HNH nuclease of divergent Cas9 species. **J Struct Biol**, 214(1):107814, DOI: 10.1016/j.jsb.2021.107814 (2022, Epub 2021).
47. Belato HB, Norbrun C, Luo J, Pindi C, Sinha S, D'Ordine AM, **Jogi G**, Palermo G, Lisi GP; Disruption of electrostatic contacts in the HNH nuclease from a thermophilic Cas9 rewires allosteric motions and enhances high-temperature DNA cleavage. **J Chem Phys**, 157(22):225103, DOI: 10.1063/5.0128815 (2022).
48. Clark NE, Katolik A, Gallant P, Welch A, Murphy EL, Buerer L, Schorl C, Naik N, Naik MT, Holloway SP, Cano K, Weintraub ST, Howard KM, Hart PJ, **Jogi G**, Damha M, Fairbrother WG; Activation of human RNA lariat debranching enzyme Dbr1 by binding protein TTDN1 occurs through an intrinsically disordered C-terminal domain. *J Biol Chem*, 299(9):105100, DOI: 10.1016/j.jbc.2023.105100 (2023).
49. Skeens E, Sinha S, Ahsan M, D'Ordine AM, **Jogi G**, Palermo G, Lisi GP; High-Fidelity, Hyper-Accurate, and Evolved Mutants Rewire Atomic Level Communication in CRISPR-Cas9. *Science Advances*, 10(10):eadl1045, DOI: 10.1126/sciadv.adl1045 (2024).
50. D'Ordine AM, **Jogi G\***, Sedivy JM\*; Identification and characterization of small molecule inhibitors of the LINE-1 retrotransposon endonuclease. **Nat Comm** 15:3883, DOI:10.1038/241467-024-48066-x (2024).
51. Belato HB, Knight AL, D'Ordine AM, Pindi C, Fan Z, Luo J, Palermo G, Jogi G, Lisi GP; Structural and dynamic impacts of single-atom disruptions to guide RNA interactions with the recognition lobe of *Geobacillus stearothermophilus* Cas9. **eLife** 19;13:RP99275. DOI:10.7554/eLife.99275 (2025).
52. Miller BD, Smail BA, vanEuwen T, Kodama H, Zalevsky A, Kondo K, Jian H, O'Brien A, Dai N, Trachman III RJ, Guan S, Karlow JA, Cheng W, Sedivy JM, **Jogi G**, Sali A, Rout MP, LaCava J, Burns KH, Taylor MS; Rapid DNA cleavage by the LINE-1 endonuclease proximal to DNA ends and at mismatches. **J Biol Chem** Vol 302, 1, 110994. DOI: 10.1016/j.jbc.2025.110994 (2026).

\* indicates corresponding author(s)

#### 4b. Non-refereed journal articles

1. **Jogl G**, Hsiao Y, Tong L; Structure and function of carnitine acyltransferases. **Ann. N.Y. Acad. Sci.** 1033, 17-29 (2004).

#### 4c. Chapters in books

1. Gruber G, **Jogl G**, Klintschar G, Kratky C; High-resolution crystal structures of cobalamins. In: Vitamin B<sub>12</sub> and B<sub>12</sub>-Proteins (Kräutler B, Arigoni D, Golding BT eds.) Wiley-Vch: Weinheim, 335-347 (1998).
2. Gregory TS, Demirci H, Carr JF, Belardinelli R, Thompson JR, Cameron D, Rodriguez-Correa D, Murphy F, Ramakrishnan V, **Jogl G**, Dahlberg AE. Genetic and crystallographic approaches to investigating ribosome structure and function. In: Ribosomes: Structure, Function and Dynamics (Green R, Wintermeyer W, Rodnina M eds.) Springer Wien-New York, p 57-69. ISBN: 978-3-7091-0214-5 (2011).

#### 4d. Abstracts

*Presented by GJ:*

- Jogl G, Murphy EL, Avila B, Singh K, Kleffmann T, Gregory ST, Murrey BE, Krause KL, Khayat R; Cryo-electron microscopy structure of the 70S ribosome from *Enterococcus faecalis*. 2019 Ribosome Meeting, Merida, Mexico.
- Connetti JL, Murphy L, Dahlberg AE, Gregory ST, Jogl G; X-ray crystal structure of a 30S ribosomal subunit lacking ribosomal protein S17. 2013 Ribosome Meeting, Napa Valley, CA.
- Jogl G, Demirci H, Murphy F, Belardinelli R, Kelley AC, Ramakrishnan V, Gregory ST, Dahlberg AE; Impact of conserved 16S rRNA methylation by KsgA on the structure of the 30S ribosomal subunit. American Crystallographic Association National Meeting 2010, Chicago.
- Jogl G, Demirci H, Murphy F, Belardinelli R, Kelley AC, Ramakrishnan V, Gregory ST, Dahlberg AE; The impact of 16S rRNA methylation by KsgA on the structure of the 30S ribosomal subunit. 2010 Ribosome Meeting, Orvieto, Italy.
- Jogl G, Demirci H, Gregory ST, Murphy F, Kelley AC, Ramakrishnan V, Dahlberg AE; Structural Dynamics of the *Thermus thermophilus* 30S ribosomal subunit induced by a streptomycin-dependence mutation in 16S rRNA. 23<sup>rd</sup> Symposium of the Protein Society, Boston, MA, 2009.
- Jogl G, Demirci H, Belardinelli R, Seri E, Gregory ST, Gualerzi C, Dahlberg AE; Structure and function of rRNA methyltransferases. VIII European Symposium of the Protein Society, Zürich, Switzerland, 2009.
- Jogl G, Demirci H, Belardinelli R, Seri E, Gregory ST, Gualerzi C, Dahlberg AE; Structure and function of rRNA methyltransferases. Nucleic Acids Gordon Research Conference, Biddeford, ME, 2009.
- Jogl G, Demirci H, Belardinelli R, Seri E, Gregory ST and Dahlberg AE; Structure of the *Thermus thermophilus* rRNA methyltransferase KsgA. Experimental Biology 2009 (ASBMB annual meeting) New Orleans, April 2009.

Jogl G and Holmes W; Crystal structure of inositol polyphosphate multikinase 2 with substrate kinetic analysis. American Crystallographic Association National Meeting 2007, Salt Lake City.

*Presented by members of the laboratory:*

Kodama H; Small molecule interactions with L1-EN: Developing fragment screen hits with EN crystals as tools to probe EN:DNA contacts. 2024 CSHL Transposable Elements Meeting.

Millien, S; Structural Characterization of the Streptomycin-Dependent Mutation P90W in 70S Ribosomes. 11<sup>th</sup> New England Cryo-EM symposium 2024.

Belato H, D'Ordine A, Jogl G, Lisi G; Unique structural and dynamic properties for the HNH nuclease in mesophilic and thermophilic Cas9 revealed by NMR. FASEB J. 36, S1, 2022.

Murphy EL, Gasteiger M, Perry D, Dahlberg AE, Gregory ST, Jogl G; Structural basis for resistance to the antibiotics capreomycin and viomycin due to base substitutions in 23S rRNA. 2019 Ribosome meeting, Merida, Mexico.

Demirci H, Sierra RG, Laksmono H, Shoeman R, Botha S, Barends T, Deponte DD, Boutet S, Messerschmidt M, Jogl G, Dahlberg AE, Gregory ST, Bogan MJ; Serial femtosecond X-ray diffraction of 30S ribosomal subunit microcrystals in liquid suspension at ambient temperature using an X-ray free electron laser. Ribosomes Conference 2013, Napa Valley, CA.

Li H and Jogl G; Crystal structure of decaprenylphosphoryl- $\beta$ -D-ribose 2'-epimerase from *Mycobacterium smegmatis*. American Crystallographic Association National Meeting 2013, Hawaii.

Demirci H, Gregory ST, Murphy F, Kelley AC, Jogl G, Ramakrishnan V, Dahlberg AE; Structural dynamics of the *Thermus thermophilus* 30S ribosomal subunit: a new crystal form induced by a streptomycin-dependence mutation in 16S rRNA. Ribosomes Conference 2010, Orvieto, Italy.

Li H and Jogl G; The crystal structure of Atg8 from *S. cerevisiae*. 23<sup>rd</sup> Symposium of the Protein Society, Boston, MA, 2009.

Demirci H, Gregory ST, Dahlberg AE and Jogl G; Recognition and catalysis of ribosomal protein L11 by the protein trimethyltransferase PrmA. XXI Congress and General Assembly of the International Union of Crystallography, Osaka, Japan, August 2008.

Li H and Jogl G; Crystal structure of a TIGAR homolog from *Danio rerio* and implications for cancer metabolism. The 22<sup>nd</sup> Symposium of the Protein Society. San Diego, CA, July 2008.

Li H and Jogl G; Crystal structure of TIGAR and implications in tumor cell metabolism regulation. Rhode Island Research Alliance Symposium, Providence, RI, June 2008.

Li H and Jogl G; Crystal structure of ZnuA from *E. coli* reveals an unexpected variation in metal coordination. The 4<sup>th</sup> Annual North Eastern Structure Symposium. Storrs, CT, October 2007.

- Li H and Jogl G; Crystal structure of the zinc-binding transport protein ZnuA from *Escherichia coli* reveals an unexpected variation in metal coordination. American Crystallographic Association National Meeting 2007, Salt Lake City.
- Demirci H, Gregory S, Dahlberg AE, Jogl G; Structure based protein engineering of ribosomal protein trimethyltransferase PrmA. American Crystallographic Association National Meeting 2007, Salt Lake City. (This poster received the best student poster award from the Protein Data Base)
- Demirci H, Gregory ST, Jogl G and Dahlberg AE; Structural and Biochemical Studies on *Thermus thermophilus* L11 methyltransferase (PrmA) methylation of ribosomal protein L11. "Ribosomes: form and function" North Falmouth, MA, June 2007.
- Demirci H, Gregory ST, Thompson J, Jogl G and Dahlberg AE; Structural Studies on *Thermus thermophilus* L11 methyltransferase (PrmA) methylation of ribosomal protein L11. Annual East Coast Ribosome Meeting, University of Massachusetts Amherst, MA, June 2005.

*Presented by collaborators:*

:

- Arantes PR, Nierzwicki L, Belato H, D'Ordine AM, Jogl G, Lisi G, Palermo G, Assessing structure and dynamics of AlphaFold2 prediction of GeoCas9. *Biophys J*, 121(3) Suppl p45a (2022).
- Pindi C, Sinha S, Belato H, Norbrun C, Luo J, D'Ordine AM, Jogl G, Lisi G, Palermo G, Dynamics and thermostability of HNH nuclease in divergent Cas9 species. *Biophys J*, 122(3) Suppl p138a (2022).

#### 4e. Invited Talks

- 2024 Brown University, Exploring the Interface between RNA & Cancer Mini Symposium
- 2019 Huangzhou University of Science and Technology/Tongji Medical College Wuhan, China  
Brown University, Biology of Aging Graduate Program Retreat
- 2018 Roger Williams University, RI
- 2013 University of Wisconsin – Madison
- 2011 IGBMC/University of Strasbourg, France  
Columbia University, New York  
Department of Chemistry
- 2010 University of Massachusetts, Dartmouth  
Department of Biology  
Rhode Island College, Providence  
BioNES Meeting, Roger Williams University, RI
- 2009 Columbia University, New York.  
Department of Biochemistry and Molecular Biophysics  
Innsbruck Medical University, Austria.  
Division of Genomics and RNomics

- University of Southern Denmark, Denmark.  
Department of Biochemistry and Molecular Biology
- University of Camerino, Italy.  
Department of Biology
- Polytechnic University of Ancona, Italy.  
Facolta di Scienze
- Graz University of Technology, Graz, Austria  
Plenary lecture, DocDay – NAWI Graz Doctoral School Molecular  
Biosciences and Biotechnology.
- University of Illinois, Chicago.  
Center for Pharmaceutical Biotechnology
- 2007 Pfizer Global Research and Development, Groton, CT.
- 2005 Brown University  
Department of Molecular Biology, Cell Biology and Biochemistry
- 2004 Brown University  
Department of Molecular Biology, Cell Biology and Biochemistry  
Boston Biomedical Research Institute, Boston, MA  
Virginia Polytechnic Institute, Blacksburg, VA
- 2003 Lerner Research Institute, Cleveland Clinic  
Department of Molecular Cardiology/Molecular Biology

#### 4f. Papers Read

- 2009 Demirci H, Gregory ST, Belardinelli R, Gualerzi C, Dahlberg AE, Jogl G. Structure and function of ribosomal RNA methyltransferases. Annual Meeting of the RNA Society, Madison, Wisconsin, 2009.
- 2007 Jogl G, Gregory ST, Dahlberg AE, Demirci H. Recognition and Catalysis of Ribosomal Protein L11 by the Protein Methyltransferase PrmA. American Crystallographic Association, National Meeting 2007.
- 2003 Jogl G and Tong L. Crystal structure of carnitine acetyltransferase and implications for fatty acid transport. American Crystallographic Association, National Meeting 2003.

#### 4h. Patents filed.

- U.S. Patent Application No. 18/537,765  
Continuation-in-part of Application 17/778,369  
Compositions and methods for treating, preventing or reversing age-associated inflammation and disorders.  
Filing Date: December 12, 2023  
Inventors: John M. Sedivy, Gerwald Jogl, Alexandra D'Ordine
- U.S. Patent Application No. 17/778,369  
Compositions and methods for treating, preventing or reversing age-associated inflammation and disorders.  
Filing Date: May 19, 2022

Inventors: John M. Sedivy, Gerwald Jogl, Alexandra D'Ordine

## 5. Research Grants

### Current Grants

R01GM094157 (MPI Jogl, G.; Gregory, S.; Khayat R.)

05/01/16 – NCE to 8/31/26

NIH/NIGMS

Effort: 0.48 calendar

*Structural Robustness of Ribosome Functional Centers*

The major goal of this proposal is to study the structural basis for phenotypic interactions of multiple antibiotic-resistance mutations in the bacterial ribosome.

Role: contact PI

R01AG016694-21 (PI: Sedivy, J.)

04/01/2020 – NCE to 03/31/26

NIH/NIA

Effort: 1.2 calendar

*Effectors of Cellular Senescence States*

The major goal of this proposal is to investigate the role of the LINE-1 retrotransposon in human aging.

Role: Co-Investigator

## 6. Service

### Service to the University

Chair, MCB Curriculum Committee (2022 – present)

Member, RNA Center Steering Committee (2023 – present)

Structural Biology Core Facility Advisory Committee, 2022 - present

Bioimaging Core Advisory Committee, 2021 – present

Biochemistry Concentration Advisor, 2009 – present

First-Year Advisor, 2009 – present

Sophomore Advisor, 2009 - present

### Service to the Profession

Member, American Crystallographic Association

Member, American Society for Biochemistry and Molecular Biology

Member, American Association for the Advancement of Sciences

Member, User Review Committee, National Center for CryoEM Access and Training, 2023 - 2025

Member Editorial Board, Journal of Biological Chemistry, July 2025 to present)

Member Editorial Board, Antibiotics (Basel), 2021-2024

Deputy Executive Editor for Structural Biology, Acta Materia Medica, 2021 to present

Ad-hoc member, NIH Study Section MSFA (2025)

Ad-hoc member, NIH ZRG1 F04-S (2024)  
Ad-hoc member, NIH Study Section MSFB (2022)

## 7. Academic Honors

2018 Brown University Elizabeth LeDuc Award for Excellence in Teaching in the Life Sciences  
2018 Brown University Seed Funds Award  
2015 Brown University Seed Funds Award  
2008 Richard B. Salomon Faculty Research Award  
2007 Brown University Seed Funds Award  
2006 Rhode Island Foundation Award  
1994 M. Sc. Thesis Award of the Austrian Chemical Society.

## 8. Teaching

### Courses (past 3 years)

#### *Spring 2026*

BIOL0280: Introductory Biochemistry, co-taught with William Holmes and George Lisi.

#### *Fall 2025*

BIOL2030: Foundations for Advanced Study in the Life Sciences; co-taught with Sofia Lizarraga

#### *Spring 2025 – Sabbatical Leave*

#### *Fall 2024*

Med Ed BIOL3642, Scientific Foundations of Medicine – Medicinal Biochemistry section.

BIOL 2270 (Section 2): Advanced Biochemistry (Brown-Pfizer Graduate Program).

#### *Spring 2024*

BIOL0280: Introductory Biochemistry, co-taught with William Holmes.

#### *Fall 2023*

BIOL2030: Foundations for Advanced Study in the Life Sciences; co-taught with Alison DeLong.

### Workshops

#### *Fall 2024*

Informal workshop on preparation of cryo-EM samples and sample evaluation using the Tundra cryo-electron microscope. 8 students.

*Fall 2022*

Informal lecture series for MCB structural biology graduate students: X-ray crystallography theory and current applications.

### **Undergraduate Directed Research**

*Spring 2023*

Jonathan Li (BIOL1960), Arian Fesharaki (BIOL1960)

*Fall 2023*

Jonathan Li (BIOL1960), Arian Fesharaki (BIOL1960), Ariyaporn Haripottawekul (BIOL1960)

*Spring 2024*

Jonathan Li (BIOL1960), Arian Fesharaki, Ariyaporn Haripottawekul (BIOL1960), Aman Bhutani

### **Brown Undergraduate Teaching and Research Assistant Awards (now SPRINT)**

Jonathan Li (2023)

Research project: Developing an in vitro translation assay using nanoluciferase as enzymatic readout.

Aman Bhutani (2024)

Research project: Functional impact of a protein deletion in the bacterial ribosomal peptidyl transferase center.

### **Undergraduate Honors Theses**

2024

Arian Fesharaki                      Sc.B. Biochemistry

Hariyaporn Haripottawekul      Sc.B. Biochemistry

### **Brown University Summer Research Early Identification Program (Leadership Alliance)**

2022      Gabriella Chatman, Pennsylvania State University

2023      Kanny Barry, CUNY Brooklyn College

## Graduate Independent Study (Rotation)

*Spring 2023*

Alexa Knight (MCB)

*Fall 2023*

Hanna Kodama (MCB), Briana Mercado (MCB)

*Spring 2024*

Sebastian Millien (MCB)

*Spring 2025*

Tyler Owens (TSGP)

*Fall 2025*

Praise Lasekan (MCB)

## Graduate Student Mentoring

Raphael Britt (MCB, co-mentored with John Sedivy, 2021 – present)

Alexa Knight (MCB, co-mentored with George Lisi, 2023 – present)

Hanna Kodama (MCB, co-mentored with Marty Taylor, 2024 – present)

Sebastian Millien (MCB, 2024 – present)

## Ph.D. Theses

Alexandra D'Ordine (MCB, co-mentored with John Sedivy)

Prior degree: B.S. Worcester Polytechnic Institute

2017 – 2023, "Identification and characterization of small molecule inhibitors of the endonuclease encoded by the LINE-1 retrotransposon"

Alexandra was awarded the MCBGP Barry Jay Rosen Award for her thesis.

Jocelyn Newton (Pathobiology, with John Sedivy)

Prior degree: B.A. University of Virginia

2017 – 2019, "Targeting the LINE-1 ribonucleoprotein particle to treat age-associated diseases"

Hua Li (MCB)

Prior degree: M.Sc. Northeastern University

2004 – 2009, "Structural and biochemical studies of TIGAR and ZnuA"

Hasan Demirci (MCB)

2003 – 2007, "Structure determination of the *Thermus thermophilus* protein methyltransferase A in complex with its substrate ribosomal protein L11"

### **Visiting Scientists**

Prof. Kurt Krause  
Department of Biochemistry  
University of Otago  
Dunedin, New Zealand  
Visiting faculty (July 2015)

Dr. Erpei Lin, Zhejiang Academy of Agricultural Sciences, Zhejiang, China,  
Visiting postdoctoral fellow (12/2014 - 11/2015).

Dr. Liu Wei, Zhejiang Academy of Agricultural Sciences, Zhejiang, China.  
visiting postdoctoral fellow (11/2012 – 2/2013).

Srinivasan Rengachari – visiting graduate student (3/2011 – 9/2011).  
PhD candidate in the biomolecular graduate program of the University of Graz, Austria.

### **Outreach to High Schools**

2011: Summer internship for Madison Bondy, Senior from South Side High School in Rockville Centre, New York.

Madison went on to Northwestern University and published a second author paper in PNAS in 2015.

2015: Summer internship for Matt Sackstein, Senior from South Side High School in Rockville Centre, New York.

2016: Summer internship for Leah Martino, Preston Rakovsky and Alex Oswald from South Side High School in Rockville Centre, New York.

2022: Summer internship for Alexandra Loucas, South Side High School in Rockville Centre, New York.

2024: Summer internship for Josh Feigenbaum, South Side High School in Rockville Centre, New York.