CURRICULUM VITAE

Gerwald Jogl
Associate Professor of Biology
Brown University
Department of Molecular Biology, Cell Biology and Biochemistry
Phone: (401) 863 6123

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

Professional Appointments

2011 – present	Associate Professor, Brown University
2004 – 2011	Assistant Professor, Brown University

Completed Publications

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_{12}-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_{12} cofactor in the two coenzyme B_{12}-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_{12} 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-β-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. **Antimicr. 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, **Jogl G***; Phase separation of the LINE-1 ORF1 protein is mediated by the N-terminus and coiled-coil domain. **Biophys J**, DOI: 10.1016/j.bpj.2021.03.028 (2021).
45. Cohen K*, Johnson M, **Jogl G**; An optimized two-track CURE course design to provide training in collaboration. Biochem Mol Biol Educ, under review (2021).

***** indicates corresponding author(s)

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).

Chapters in books

1. Gruber G, **Jogl G**, Klintschar G, Kratky C; High-resolution crystal structures of cobalamins. In: Vitamin B_{12} and B_{12}-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).

Abstracts

Presented by GJ:

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.

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, 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, Gualerzi C, Dahlberg AE; Structure and function of rRNA methyltransferases. VIII European Symposium of the Protein Society, Zürich, Switzerland, 2009.

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. 23rd Symposium of the Protein Society, Boston, MA, 2009.

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, 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.

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, 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.

Presented by members of the laboratory:

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.

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 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)

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.

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

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 a TIGAR homolog from *Danio rerio* and implications for cancer metabolism. The 22nd Symposium of the Protein Society. San Diego, CA, July 2008.

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; The crystal structure of Atg8 from S. cerevisiae. 23rd Symposium of the Protein Society, Boston, MA, 2009.

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; Crystal structure of decaprenylphosphoryl-β-D-ribose 2'-epimerase from Mycobacterium smegmatis. American Crystallographic Association National Meeting 2013, Hawaii.

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.

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.

Invited Talks

2003 Lerner Research Institute, Cleveland Clinic
Department of Molecular Cardiology/Molecular Biology

2004 Brown University
Department of Molecular Biology, Cell Biology and Biochemistry
Boston Biomedical Research Institute, Boston, MA
Virginia Polytechnic Institute, Blacksburg, VA

2005 Brown University
Department of Molecular Biology, Cell Biology and Biochemistry

2007 Pfizer Global Research and Development, Groton, CT.

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

2010 University of Massachusetts, Dartmouth
Department of Biology

2011 IGBMC/University of Strasbourg, France
Columbia University, New York
Department of Chemistry
Rhode Island College, Providence
BioNES Meeting, Roger Williams University, RI
2013 University of Wisconsin – Madison
2018 Roger Williams University, RI
2019 Huangzhou University of Science and Technology/Tongji Medical College Wuhan, China
Brown University, Biology of Aging Graduate Program Retreat

Papers Read

2003 Jogl G and Tong L. Crystal structure of carnitine acetyltransferase and implications for fatty acid transport. American Crystallographic Association, National Meeting 2003.

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.

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.

Patents filed

International Application No. PCT/US2020/061842
Title: Compositions and methods for treating, preventing or reversing age-associated inflammation and disorders
Filing date: November 23, 2020
Inventors: John M. Sedivy, Gerwald Jogl, Alexandra D'Ordine

Research Grants

Current Grants

1R01GM094157-05 (MPI Jogl, G.; Gregory, S.) 05/01/16 – 04/30/22 (NCE)
NIH/NIGMS
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: PI

P20GM109035 (Rand) 06/01/16 – 02/28/21
NIH/NIGMS
COBRE Center for Computational Biology of Human Disease

The goal is to establish and build the COBRE Center for Computational Biology of Human Disease and support the research activities of junior investigators spanning computational and clinical studies.
Role: Mentor

BBII Award (PI: Lee) 09/01/19 – 02/2/2021
Brown University
Development of Chitinase 1 Inhibitor Kasugamycin as a Therapeutic Drug for Pulmonary Fibrosis
The major goal of this award is to characterize derivatives of kasugamycin as chitinase 1 inhibitors.
Role: Co-Investigator

R01 AG016694-21 (PI: Sedivy, J.) 04/01/2020 – 03/31/25
NIH/NIA
Effectors of Cellular Senescence States
The major goal of this proposal is to investigate the role of the LINE-1 retrotransposon in human ageing.
Role: Co-Investigator

Completed Grants
Brown University Research Seed Funds Award 2018
Instrumentation for specimen vitrification for electron cryo-microscopy at Brown University
Role: Co-investigator (PI: Alexandra Deaconescu)

Brown University Research Seed Funds Award 2015
Engineering orthogonal ribosomes to study ribosome function
Role: PI with Co-PI Steven Gregory, MCB.

P20 RR15578 (PI: Atwood, WJ) 07/01/05 – 02/28/10
NIH/NCRR
Center for Cancer Signaling Networks
Role: Lead Investigator of a subproject: Structural studies of phosphoinositol kinase related protein kinases.

Brown University 01/2008 – 12/2008
Richard B. Salomon Faculty Research Award
Structural biology of the human Sir2 homolog, Sirt6, in complex with the Gcip tumor suppressor.
Role: PI

Brown University Seed Funds Award 02/01/2006 – 01/31/2007
Structural biology and function of macromolecular complexes
Role: Co-PI (with Rebecca Page)

Rhode Island Foundation Medical Research Grant 01/01/2006 – 12/31/2006
X-ray structure determination of inositol phosphate multikinase Ipk2
Role: PI

Service

Service to the University

Laboratories of Molecular Medicine Operations Committee, 2005 - present
Biochemistry Concentration Advisor, 2009 – present
First-Year Advisor, 2009 – present
Sophomore Advisor, 2009 - present

Faculty Mentor for George Lisi (Assistant Professor MCB) 2018 - present
Faculty Mentor for Alexandra Deaconescu (Assistant Professor MCB) 2016 - present
Faculty Mentor for Shipra Vaishnava, Assistant Professor in the Department of Molecular Microbiology and Immunology, 2015 – present
Faculty Mentor for RI-INBRE early career award to William Holmes, Rhode Island College, 2016 - 2019

MCB Graduate Program Admissions Committee, 2005/2006
MCB Faculty Executive Committee, 2006/2007
MCB Curriculum Committee, 2007/2008
MCB Faculty Executive Committee, 2008/2009
MCB Curriculum Committee, 2009-2011, 2014
MCB Structural Biology Faculty Search Committee 2012/2013
MCB Graduate Program Admissions Committee 2012/2013
Member TEAM (Team Enhanced Advising and Mentoring), 2012/2013
MCB Space Committee 2013/2014
MCB Curriculum Committee 2014/2015/2016/2017
MCB Faculty Search Committee, Structural Biology Search, Committee Chair, 2017
MCB Graduate Program Admissions Committee, 2018/2019
MCB Curriculum Committee, 2020/2021
MCB Graduate Program Admissions Committee, 2020/2021
MMI Lecturer Search Committee, 2021

Proposal reviewer Richard B. Salomon Faculty Research Awards (2015)
Proposal reviewer for Brown Research Seed Awards (2016)
Proposal reviewer of Brown i-TEAM UTRA Awards (2017)
Proposal reviewer of Brown Research Seed Awards (2018)

Service to the Profession

Member, American Crystallographic Association
Member, American Society for Biochemistry and Molecular Biology
Member, American Association for the Advancement of Sciences

Editorial Board, Antibiotics (Basel), 2021-2024

Proposal Review Panelist for the National Science Foundation: MRI FY10 Panel II (2010)
Ad-hoc member, NIH Study Section ZRG1 IDM-S (2014)
Ad-hoc member, NIH Study Section MSFC – Macromolecular Structure and Function (2015)
Ad-hoc member, NIH Study Section MSFB (2016)
Mail-in reviewer NIH ZRG1 RPHB-W(52)R (2016)
Ad-hoc member, NIH Study Section MSFB (2017)
Mail-in reviewer NIH ZRG1 RPHB-W(53)R (2017)
Ad-hoc member NIH ZRG1 IMST-H(02)M (2018)
Ad-hoc member, NIH Study Section MSFB (2019)

Peer review of grant proposals for the Biotechnology and Biological Sciences Research Council, UK.

Faculty tenure review for the University of Graz, Austria (2013, 2014).
Grant review for the Czech Science Foundation (2013).
Peer review for 'Berta Karlik' named faculty positions for the University of Vienna, Austria.

Peer review of manuscripts for the following journals:
Antimicrobial Agents & Chemotherapy, Acta Crystallographica, Biochemical Journal, Biochemistry, Biochimie, Biomed Central Structural Biology, Biomed Central Microbiology, Bioorganic & Medicinal Chemistry, FEBS Journal, Journal of Bacteriology, Journal of Biological Chemistry, Journal of Molecular Biology, Nucleic Acids Research, PLoS One, RNA, Research

Book Reviews:
Textbook review Nelson, Cox & Hoskins, 'Lehninger's Principles of Biochemistry', 8ed (2019)
Textbook review Miesfeld, 'Biochemistry', 2nd ed (2019)
Textbook review Stryer, Berg, 'Biochemistry' 9ed (2017)
Textbook review Moran, Horton, Scrimgeour, Perry, 'Principles of Biochemistry' 6ed (2015)
Textbook review (online content) Berg, Timoczko, Stryer, 'Biochemistry' 7ed (2015)
Textbook review Berg, Timoczko, Stryer, 'Biochemistry' 7ed (2013)
Review for textbook 'Introduction to Bioorganic Chemistry and Chemical Biology' (2011)
Proposal review for textbook 'Autophagy in Health and Disease' (2010)
Pre-proposal review for textbook 'Biochemical Bottom Lines' (2009)
Proposal review for new textbook 'Cell Signaling' (2008)
Pre-revision review Stryer, 'Biochemistry', 7th edition (2008)
Chapters 13,14 of Lehninger, 'Principles of Biochemistry', 5th edition (2006)

Chapters 12-14 of Stryer, 'Biochemistry', 6th edition (2005)

Academic Honors

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

Teaching

Courses

Spring 2006
BIOL0220 Topics in Biochemistry: Proteins: Synthesis, Folding, Structure and Function (with K. Mowry and T. Serio)

BIOL0280 Introductory Biochemistry (with K. Mowry and A. Salomon)

Fall 2006
BIOL0221 Current Topics in Biochemistry and Molecular Biology: Molecular Mechanisms in Signal Transduction (with A. Salomon)

Spring 2007
BIOL0280 Introductory Biochemistry (with A. Salomon)

Fall 2007
BIOL0221 Current Topics in Biochemistry and Molecular Biology: Molecular Mechanisms in Signal Transduction (with A. Salomon)

Spring 2008
BIOL0280 Introductory Biochemistry (with A. Salomon)

Fall 2008
BIOL0221 Current Topics in Biochemistry and Molecular Biology: Molecular Mechanisms in Signal Transduction (with A. Salomon)

Spring 2009
BIOL0280 Introductory Biochemistry (with A. Salomon)

Spring 2010
BIOL0280: Introductory Biochemistry (with A. Salomon)

Spring 2011
BIOL0280: Introductory Biochemistry (with A. Salomon)

BIOL2200A: Molecular Biology and Chemistry (with R. Page)

Fall 2011
BIOL2200D: Current Topics in Biochemistry: Epigenetics, Chromatin, and Transcription (with E. Larschan)

Fall 2012
BIOL1270/2270: Advanced Biochemistry (with Alex Brodsky and Al Dahlberg)

BIOL1270 S02: Advanced Biochemistry (Pfizer-Brown graduate program)

Spring 2013
BIOL0280: Introductory Biochemistry

Fall 2013
BIOL2030: Foundations for Advanced Study in Experimental Biology

Spring 2014
BIOL2000D: Current Topics in MCDB, Antibiotics, antibiotic resistance and ribosome function (with Susan Gerbi).

Spring 2015
BIOL0280: Introductory Biochemistry

Fall 2015
Scientific Foundations of Medicine – Medicinal Biochemistry section

Spring 2016
BIOL0285: Introductory Biochemistry Laboratory
Course leader (co-taught with Sarah Taylor), course developer

BIOL0280: Introductory Biochemistry

Spring 2017
BIOL0280: Introductory Biochemistry

Fall 2017
Med Ed BIOL3642, Scientific Foundations of Medicine – Medicinal Biochemistry section, 12 lectures

BIOL1270/2270: Advanced Biochemistry
Course evaluation: 2.42, Instructor evaluation: 1.60

Fall 2018

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

BIOL1270/2270: Advanced Biochemistry
co-taught with Alexandra Deaconescu and Art Salomon.

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

Spring 2019
BIOL0280: Introductory Biochemistry
course leader, co-taught with Louis Lapierre and Alexandra Deaconescu.

Fall 2019
Med Ed BIOL3642, Scientific Foundations of Medicine – Medicinal Biochemistry section
12 lectures

Spring 2020
Sabbatical Leave

Fall 2020
Med Ed BIOL3642, Scientific Foundations of Medicine – Medicinal Biochemistry section
12 lectures

Spring 2021
BIOL0280: Introductory Biochemistry
co-taught with Art Salomon, George Lisi and Alexandra Deaconescu.

Guest Lectures

Fall 2004
BIOL0201A: Introduction to MCB Graduate Program Faculty Research

Spring 2005
BIOL0194/PH0199: Special Topics in Experimental and Theoretical Physics

Fall 2005
BIOL0201A: Introduction to MCB Graduate Program Faculty Research

Spring 2006
BIOL0194/PH0199: Special Topics in Experimental and Theoretical Physics
Fall 2006
BIOL0201A: Introduction to MCB Graduate Program Faculty Research

Spring 2007
BIOL0194/PH0199: Special Topics in Experimental and Theoretical Physics
Fall 2007
BIOL0201A: Introduction to MCB Graduate Program Faculty Research

Spring 2008
PH2620: Special Topics Physics

Fall 2008
BIOL0201A: Introduction to MCB Graduate Program Faculty Research

Spring 2013
BIOL1200: Protein Biophysics and Structure

Spring 2014
BIOL1200: Protein Biophysics and Structure

Fall 2014
BIOL1300: Biomolecular Interactions: Health, Disease and Drug Design

Fall 2015
BIOL1300: Biomolecular Interactions: Health, Disease and Drug Design

Fall 2016
BIOL1300: Biomolecular Interactions: Health, Disease and Drug Design
BIOL1050: Biology of the Eukaryotic Cell

Spring 2017
BIOL2010: Quantitative Approaches to Biology

Fall 2018
BIOL1300: Biomolecular Interactions: Health, Disease and Drug Design
2 lectures for BIOL2030: Foundations for Advanced Study in the Life Sciences

Fall 2019
BIOL1300: Biomolecular Interactions: Health, Disease and Drug Design
2 lectures for BIOL2030: Foundations for Advanced Study in the Life Sciences

External Guest Lectures

Spring 2012, 2013, 2014 & 2015

RapiData Collection & Structure Solving, a practical course in macromolecular X-ray crystallography. Brookhaven National Laboratory, Upton, NY. Guest lecture and intensive all-day tutorials in crystallographic data processing with the XDS software package.

Brown University First Readings Seminars

Fall 2007 Alain de Botton, *How Proust can Change your Life*
Fall 2008 Rory Stewart, *The Places in Between*
Fall 2009 Jonathan Weiner, *The Beak of the Finch*
Fall 2010 Edwidge Danticat, *The Dew Breaker*
Fall 2011 Leslie T. Chang, *Factory Girls*
Fall 2012 Charles Rappleye, *Sons of Providence*
Fall 2013 Eyal Press, *Beautiful Souls*
Fall 2014 Oil and Water
Fall 2015 Michelle Alexander, *The New Jim Crow*
Fall 2016 Sonia Sotomayor, *My Beloved World*
Fall 2017 Anthony Marra, *The Tsar of Love and Techno*
Fall 2018 Matthew Desmond*, Evicted*
Fall 2019 Elif Batuman*, The Idiot*

Undergraduate Directed Research

Fall 2005
Jonathan Herman (BIOL1950), Devina Swarup (BIOL1950)

Spring 2006
Jonathan Herman (BIOL1960), Devina Swarup (BIOL1960)

Fall 2006
Megha Katti

Spring 2007
Megha Katti, Siqing He,

Fall 2007
Megha Katti (BIOL1950), Siqing He (BIOL1950), Holly Careskey (BIOL1950)

Spring 2008
Megha Katti (BIOL1960), Siqing He (BIOL1960), Holly Careskey (BIOL1960), Ashwin Cadambi

Fall 2008
Ashwin Cadambi (BIOL1950), SeanMcGeary (BIOL1950), Rohan Keshwara (BIOL1950), Kevin Huang

Spring 2009
Ashwin Cadambi (BIOL1960), SeanMcGeary (BIOL1960), Rohan Keshwara (BIOL1960), Kevin Huang

Fall 2009
Kevin Huang, Ayoosh Pareek

Spring 2010
Kevin Huang

Fall 2010
Kevin Huang (BIOL1950), Timothy Eisen (BIOL1950), Faiz Jiwani

Spring 2011
Kevin Huang (BIOL1960), Timothy Eisen (BIOL1960)

Fall 2012
Tae Ho Rho (BIOL1950), Sha Sha

Spring 2013
Tae Ho Rho (BIOL1960), Sha Sha, Mamadou Diallo

Fall 2013
Darish Hyunh (BIOL1950), Matthew Gasteiger, Mamadou Diallo

Spring 2014
Darish Hyunh (BIOL1960), Matthew Gasteiger (BIOL1960), Mamadou Diallo, David Perry

Fall 2014
Matthew Gasteiger (BIOL1950), Mamadou Diallo (BIOL1950), Michael Ayele (BIOL1950), Cecilia Berriz (BIOL1950), Jessica Yu

Spring 2015
Matthew Gasteiger (BIOL1960), Mamadou Diallo (BIOL1960), Michael Ayele (BIOL1960), Jessica Yu

Fall 2015
Aziz Rangwala (BIOL1950), Charles Saylor (BIOL1950), Cecilia Berriz (BIOL1950), Jessica Yu

Spring 2016
Aziz Rangwala (BIOL1960), Charles Saylor (BIOL1960), Jessica Yu

Fall 2016
Aziz Rangwala (BIOL1950), Jessica Yu (BIOL1950)

Spring 2017
Aziz Rangwala (BIOL1960), Jessica Yu (BIOL1960)

Fall 2017
Jessica Yu (BIOL1950)

Spring 2018
Jessica Yu (BIOL1960), Grace Li, Ashley Battenberg

Fall 2018
Grace Li (BIOL1950), Ashley Battenberg

Spring 2019
Grace Li (BIOL1960), Ashley Battenberg

Summer 2019
Anoop Gurram

Fall 2019
Grace Li (BIOL1950), Ashley Battenberg, Anoop Gurram (BIOL1950), Nikhil Bajaj (BIOL1950)
Spring 2020
Grace Li (BIOL1960), Ashley Battenberg (BIOL1960), Anoop Gurram, Nikhil Bajaj (BIOL1960)

Fall 2020
Ashley Battenberg (BIOL1950)

Spring 2021
Anoop Gurram (BIOL1960)

Brown Undergraduate Teaching and Research Assistant Awards

Devina Swarup (2005)
Research project: Furin-like prohormone convertase from *Giardia lamblia*

Siqing He (2007)
Research project: Purification and crystallization of the metal-free ZnuA zinc-transport protein.

Kevin Huang (2010)
Research project: The interaction between nucleolar RNA methyltransferase NSun2 and microtubule-stabilizing protein NuSAP during mitotic spindle assembly.

Matthew Gasteiger (2014)

Research project: Crystallization of yeast ribosomes.

David Perry (2014)
Research project: Crystallization of 50S ribosomal subunits from *M. smegmatis*.

Aziz Rangwala (2016)
Research project: Crystallization of streptomycin-bound 70S ribosomes from a streptomycin-dependent strain of *Thermus thermophilus*.

Jessica Yu (2016 – declined)
Jessica accepted an NIH internship with a deadline before the UTRAs were announced.

Jessica Yu (2017)
Research project: Evaluation of single-site mutations in ribosomal RNA by sequencing methods.

Grace Li (2019)
Research project: Isolation, purification and crystallization of the LINE-1 ORF2 reverse transcriptase domain.

Ashley Battenberg (2019 – declined)
Research project: Crystal structures of the TIGAR enzyme in complex with small-molecule inhibitors.

Ashley Battenberg (2020)
Research project: Investigating the LINE-1 ORF2 C-terminal domain.

Ashley Battenberg (2021)
Research project: Defining boundaries of the C-terminal domain of human LINE-1 retrotransposon ORF2 protein.

Undergraduate Honors Theses

2008
Holly Careskey Sc.B. Biochemistry
Megha Katti Sc.B. Biology
Siqing He Sc.B. Biology,
Siqing was awarded a Class of 2008 Senior Prize in Biology.
2009
Ashwin Cadambi Sc.B. Computational Biology
Sean McGeary Sc.B. Biophysics

2011
Kevin Huang Sc.B. Biology
Timothy Eisen Sc.B. Chemistry

2015
Matthew Gasteiger Sc.B. Biology
Matthew was awarded a 2015 Senior Biology Prize for Academic Excellence.
Michael Ayele Sc.B. Biochemistry
Cecilia Berriz A.B. Biology

2017
Aziz Rangwala Sc.B. Biochemistry

2018
Jessica Yu Sc.B. Biochemistry

2020
Grace Li Sc.B. Biochemistry
Grace was awarded a 2020 Senior Biology Prize for Academic Excellence.

2021
Ashley Battenberg Sc.B. Biochemistry
Ashley was awarded a 2021 Senior Biology Prize for Academic Excellence.

Laboratory Research Trainees/Volunteers

Arinita Pramanik, M.Sc. (Fall 2006 – Spring 2007)
Howey Hou Qiu (Summer 2015)
Kate N. Sollecito (Summer 2016)
Kate received a RI-INBRE Summer Undergraduate Research Fellowship for her project “Crystallization of Thermus thermophilus 70S ribosomes lacking ribosomal protein S17”.
Christopher Lafen (Summer 2016)
Chris received a summer research fellowship from his home institution, the Wheaton College.
Jeremy Boutin (Summer 2017)
Jeremy received a RI-INBRE Summer Undergraduate Research Fellowship.

Graduate Independent Study (Rotation)

Fall 2005
David Critton (MCB)

Spring 2006
Shanda Birkeland (MCB)

Fall 2006
William Holmes (MCB)
Stephen Brown (MCB)

Fall 2012
Alexander Conicella (MCB)

Fall 2017
Anders Ohman (MPPB, co-mentored with John Sedivy)

Spring 2018
Corinne Hutfilz (MCB, co-mentored with John Sedivy)
Alexandra D'Ordine (MCB, co-mentored with John Sedivy)

Fall 2019
Gabriel Monteiro da Silva (MCB, co-mentored with John Sedivy)

Spring 2020
Jennifer Cui (MCB)

Fall 2020
Raphael Britt (MCB, co-mentored with John Sedivy)

Spring 2021
Erin Skeens (MCB)

Graduate Student Mentoring

Alexandra D'Ordine (MCB, co-mentored with John Sedivy, 2018 – present)

Ph.D. Theses

Hasan Demirci (MCB)
2003 – 2007, "Structure determination of the *Thermus thermophilus* protein methyl-transferase A in complex with its substrate ribosomal protein L11"

Hua Li (MCB)
Prior degree: M.Sc. Northeastern University
2004 – 2009, "Structural and biochemical studies of TIGAR and ZnuA"

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"

Academic Advising

Trainer for the MCB and MPPB graduate programs.

Graduate Program Thesis Committee member for the following students:
Xien Yu Chua (MPPB, Advisor: Art Salomon, 2017 – present)
Kaylee Matthews (MCB, Advisor: Nick Fawzi, 2017 – present)
Emily Chen (MCB, Advisor: George Lisi, 2020 – present)
Jennifer Cui (MCB, Advisor: George Lisi, 2020 – present)
José F. Mercado Ortiz (MPP, Advisor: Nick Fawzi, 2021 – present)
Gabriel Monteiro Da Silva (MCB, Advisor: Brenda Rubenstein, 2021 – present)

External Thesis Committee Reader
Pernille Kronholm Rasmussen (University of Southern Denmark, DK, 2021)

Completed Thesis Committees:
Zheng You (Chemistry)
Breann Brown (MPPB)
Simina Grigoriu (MCB)
Diana Lizarazo (MPPB)
Rui Zhang (Chemistry, 2016)
Anastasia Murthy (MCB, 2020)
Zachary DeLoughery (MPPB, 2020)

Completed Master's Thesis Committees:
Julia Leung (MCB)

Undergraduate Sophomore Advisor for the following students:
2009: Mei Cao, Kathleen Yan.
2010: Matthew LaForgia, Charis Loke, Iriff Ulep.
2011: Maria Burgos, Somanea Chea, Richard Diesso
2012: Stephen Balog, Cecilia Berriz, Yunqi Zhang
2013: Earnest Anderson, Joshua Chavez, Adam Gottesman, Rebecca Patey, Spencer Reagan
2014: Sean Blake, Emily Dinger, Kyle Gion, Alexander Tulett, Joshua Wang
2015: Stella Chong, Brianna Irons, Isabella McCormack, Kelechukwu Udozorh, Ekin Uner
2016: Joy Jiang, McKenna Miller, Erica Nguyen, Michael Stanger, Julius Sun, Emily Yoshioka
2017: Guilherme Barbosa, Rebecca Berger-Gutierrez, Ryan Chace, Geoffrey Huang, Demitri Jackson, Pim Kijkool
2018: Mohammad Amoush, Chima Amushie, Nomin Baatarkuhh, Bailey Pate, Sai Kaushik Yeturu, Rea Yoh

Undergraduate Freshman Advisor for the following students:
2009: Samuel Arnow, Matthew LaForgia, Charis Loke, Iriff Ulep, Reed Watne.
2010: Seth Akers-Campbell, Maria Burgos, Somanea Chea, Richard Diesso.

2011: Stephen Balog, Cecilia Berriz, Spencer Reagan, Yunqi Zhang
2012: Earnest Anderson, Joshua Chavez, Rebecca Patey
2013: Emily Dinger, Kyle Gion, Alec Tulett, Kieja Veldman, Joshua Wang
2014: Stella Chong, Brianna Irons, Kelechukwu Udozorh, Ekin Uner
2015: McKenna Miller, Erica Nguyen, Michael Stanger, Julius Sun, Emily Yoshioka
2016: Guilherme Barbosa, Rebecca Berger-Gutierrez, Ryan Chace, Geoffrey Huang, Demitri Jackson
2017: Mohammad Amoush, Chima Amushie, Nomin Baatarkuhh, Isabelle Dressel, Bailey Pate, Sai Kaushik Yeturu
2018: Samra Beyene, Madelyn Frey, Shakson Isaac, Phong Nguyen, Lucy Tian
2020: Bailey Clark, Elicia Colon, Ann Gallagher, Kiara Johnson, Max Schneider-White

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, Zhejian, 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.