

Curriculum Vitae

Amnon Kohen

Department of Chemistry
University of Iowa
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EDUCATION AND PROFESSIONAL HISTORY

Education	D.Sc., Chemistry Technion – Israel Institute of Technology, Haifa, Israel Advisor: Professor T. Baasov Topic: Mechanistic Studies of the Enzyme KDO8P Synthase	1989-1994
	B.Sc., Chemistry (with Honors) Hebrew University, Jerusalem, Israel	1986-1989
Positions	Professor Department of Chemistry, University of Iowa, Iowa City, IA and Molecular and Cellular Biology Program	2010-Present
	Associate Professor Department of Chemistry, University of Iowa, Iowa City, IA and Molecular and Cellular Biology Program	2005-2010
	Assistant Professor Department of Chemistry, University of Iowa, Iowa City, IA	1999-2005
	Postgraduate Researcher With Professor Judith Klinman Department of Chemistry, University of California, Berkeley Topic: Hydrogen Tunneling in Biology: Alcohol Dehydrogenases	1997-1999
	Postgraduate Fellow With Professor Judith Klinman Department of Chemistry, University of California, Berkeley Topic: Hydrogen Tunneling in Biology: Glucose Oxidase	1995-1997
	Visiting Scholar With Professor Karen S. Anderson Department of Pharmacology, Yale Medical School, New Haven, CT	Fall 1994

Affiliations Center for Biocatalysis and Bioprocessing (CBB) University of Iowa (2000-Present)
The Interdisciplinary Graduate Program in Molecular Biology, University of Iowa (2003-Present)
American Chemical Society (1995-Present)
Divisions: Organic Chemistry, Physical Chemistry, Biochemistry
Sigma Xi (1997-Present)
Protein Society (1996-1998)

Honors and Awards

- The Lady Davis Visiting Professorship (The Lady Davis Fellowship Trust, Israel – 2009)
 - Faculty Scholars Award (University of Iowa- 2007-2010)
 - Career Development Award (University of Iowa- 2006-2007)
 - NSF Faculty Early Career Development (CAREER) Award (2002-2007)
 - Wolf Foundation Award for excellence in doctoral studies (1992)
 - Miriam and Aaron Gutwirth Award for excellence in graduate studies (1991)
 - Amos-De-Shalit Scholarship for distinguished undergraduate students (1987)
 - Hebrew University Dean's List (1987-1989)
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SCHOLARSHIP

Publications All the publication below are in a peer reviewed journals and books.
(* = Corresponding author, senior author, major contribution)

Publications resulting from work performed at Iowa:

1. Vardi-Kilshtain, A., Major, D.T.,* Kohen, A., Doron, D., “Hybrid Quantum and Classical Simulations of the Formate Dehydrogenase Catalyzed Hydride Transfer Reaction on an Accurate Semi-Empirical Potential Energy Surface”, *J. Chem. Theory Comput.*, Submitted April 4, **2012**.
2. Liu, Q., Zhao, Y., Hammann, B., Eilers, J., Kohen, A.,* Lu, Y.,* “A Model Reaction Assesses Contribution of H-Tunneling and Coupled Motions to Enzyme Catalysis”, *J. Am. Chem. Soc.*, Submitted March 23, **2012**.
3. Doron, D., Kohen, A., Major, D.T.,* “Momentum Distribution as a Fingerprint of Quantum Delocalization in Enzymatic Reactions: Open-Chain Path-Integral Simulations of Model Systems and the Hydride Transfer in Dihydrofolate Reductase”, *J. Chem. Theory Comput.*, Submitted March 22, **2012**.
4. Cheatum, C.M.,* Kohen, A,* “Relationship of Femtoseconds Dynamics to the Catalyzed Hydrogen Transfer” *Topics in Current Chemistry*, Special issue on “Macromolecular Dynamics in Biological Catalysis”, Eds, Hammes-Schiffer, S. & Klinman, J.P., Pub: Elsevier, Submitted Jan., 4, **2012** (Invited Review).

5. Engel, H., Doron, D. Kohen, A., Major, D.T.,* “Momentum Distribution as a Fingerprint of Quantum Delocalization in Enzymatic Reactions: Open-Chain Path-Integral Simulations of Model Systems and the Hydride Transfer in Dihydrofolate Reductase”, *J. Chem. Theory Comput.*, Accepted Feb 10, **2012**.
6. Mishanina, T.V., Koehn, E.M., Conrad, J.A., Palfey, B., Lesley, S.A., Kohen, A.*, “Flavin-Dependent Thymidylate Synthase: Trapping of a Reaction Intermediate”, *J. Am. Chem. Soc.*, **2012**, *134*, 4442–4448.
7. Wang, Z., Roston, D., Kohen, A.*, “Experimental and theoretical studies of enzyme-catalyzed hydrogen transfer reactions”, in “Structural and Mechanistic Enzymology: Bringing together Experiments and Computing”, Christov, C.Z., and Karabancheva-Christova, T., Volume Eds., in series entitled “Advance in Protein Chemistry and Structural Biology”, Ed. Donev, R., Pub. Elsevier, Accepted and will be produced Aug. 12, **2012**.
8. Stojković, V., Perissinotti, L.L., Willmer D.J., Benkovic, S.J., Kohen, A.*, “Effects of the donor acceptor distance and dynamics on hydride tunneling in the dihydrofolate reductase catalyzed reaction”, *J. Am. Chem. Soc.*, **2012**, *134*, 1738-1745.
9. Mishanina, T.V., Koehn, E., Kohen, A.*, “Mechanisms and inhibition of uracil methylating enzymes”, *Bioorg. Chem.*, (invited review). Published on-line Nov. 29, **2011** (<http://dx.doi.org/10.1016/j.bioorg.2011.11.005>).
10. Dutta, S., Li, Y-L., Rock, W., Houtman, J.C., Kohen, A., Cheatum, C.M., "3-Picolyl Azide Adenine Dinucleotide as a Probe of Femtosecond to Picosecond Enzyme Dynamics", *J. Phys. Chem. B.*, **2011**, *116*, 542–548.
11. Doron, D. Major, D.T.,* Kohen, A., Thiel, W., Wu, X., “Hybrid Quantum and Classical Simulations of the Dihydrofolate Reductase Catalyzed Hydride Transfer Reaction on an Accurate Semi-Empirical Potential Energy Surface”, *J. Chem. Theory Comput.*, **2011**, *7*, 3420-3437.
12. Oyeyemi, O.A., Sours, K.M. Lee, T., Kohen, A., Resing, K.A., Ahn, N.G., and Klinman, J.P.*, “Comparative Hydrogen-Deuterium Exchange for a Mesophilic vs. Thermophilic Dihydrofolate Reductase at 25°C: Identification of a Single Active Site Region with Enhanced Flexibility in the Mesophilic Protein”, *Biochemistry* **2011**, *50*, 8251–8260.
13. Saeed, M., Tewson, T.J., Erdahl, C.E., Kohen, A.*, “A fast chemo-enzymatic synthesis of [¹¹C]-N⁵,N¹⁰-methylene tetrahydrofolate as a potential PET tracer for proliferating cells”, *Nucl. Med. Biol.*, accepted for publication Dec. 5, **2011** ([http://www.nucmedbio.com/article/S0969-8051\(11\)00305-2/abstract](http://www.nucmedbio.com/article/S0969-8051(11)00305-2/abstract)).
14. Saeed, M., Sheff, D, Kohen, A.*, “A novel positron emission tomography tracer distinguishes normal from cancerous cells”, *J. Biol. Chem.*, **2011**, *286*, 33872–33878.
15. Ditzler, L., Sen, A., Gannon, M., Kohen, A.,* Tivanski, A.,* “Self-assembled enzymatic monolayer directly bound to a gold surface: Activity and molecular recognition force spectroscopy studies”, *J. Am. Chem. Soc.* (Communication) **2011**, *133*, 13284-13287.
16. Dutta, S., Rock, W., Cook, R.J., Kohen, A., and Cheatum, C.M.*, “Two-dimensional infrared spectroscopy of azido-nicotinamide adenine dinucleotide in water”, *J. Phys. Chem.* published online Aug. 5, **2011**, *135*, 055106; (6 pages) doi:10.1063/1.3623418.
17. Sen, A., Yahasiri, A., Kohen, A.*, “Triple isotopic labeling and kinetic isotope effects: a sensitive and accurate method for exposing H-transfer steps in enzymatic systems”, *Biochemistry*, **2011**, *50*, 6462–6468. This article has been chosen to be highlighted on the journal’s home page.

18. Kanaan, N., Ferrer, S., Martí, S, Garcia-Viloca, M., Kohen, A., Moliner, V.*, “Temperature Dependence of the Kinetic Isotope Effects in Thymidylate Synthase. A Theoretical Study”, *J. Am. Chem. Soc.*, **2011**, 133, 6692-6702.
19. Kohen, A.*, Roston, D., Stojković, V., Wang, Z. In *Encyclopedia of Analytical Chemistry*; Meyers, R. A., Ed.; John Wiley & Sons, Ltd: Chichester, UK, **2011**; Vol. S1-S3, p 77-99, ISBN: (978-0-470-97333-2).
20. Stojković, V., Perissinotti, L.L., Lee, J., Benkovic, S.J., Kohen, A.*, “The effect of active-site isoleucine to alanine mutation on the DHFR catalyzed H-transfer”, *Chem. Commun.* **2010**, 46, 8974 - 8976.
21. Dutta, S., Cook, R.J., Houtman, J.C.D., Kohen, A.*, and Cheatum, C.M.*, “Characterization of azido-NAD⁺ to assess its potential as a two-dimensional infrared probe of enzyme dynamics”, *Anal. Biochem.*, **2010**, 407, 241–246.
22. Bandaria, J., Dutta, S., Nydegger, M.W., Rock, W., Kohen, A., and Cheatum, C.M.*, “Characterizing the dynamics of functionally relevant complexes of formate dehydrogenase”, *Proc. Natl. Acad. Sci. USA.* **2010**, 107, 17974–17979.
23. Wang, Z., and Kohen, A.*, “Thymidylate synthase catalyzed H-transfers: Two chapters in one tale”, *J. Am. Chem. Soc.*, **2010**, 132, 9820–9825.
24. Roston, D., and Kohen, A.*, “The elusive transition state of alcohol dehydrogenase unveiled”, *Proc. Natl. Acad. Sci. USA.*, **2010**, 107, 9572-9577.
25. Sen, A., and Kohen, A.*, “Enzymatic tunneling and kinetic isotope effects: chemistry at the crossroads”, *J. Phys. Org. Chem.* **2010**, 23, 613–619 (invited review for a special issue entitled “Symposium in Print on Tunneling”).
26. Koehn, E.M., Kohen, A.*, “Flavin-dependent thymidylate synthase: A novel pathway towards thymine”, *Archiv. Biochem. Biophys.* **2010**, 493, 96 – 102.
27. Yahashiri, A.; Nimrod, G.; Ben-Tal, N.; Howell, E.E.; Kohen, A.*, “Effect of electrostatic shielding on H-tunneling in R67 dihydrofolate”, *ChemBioChem*, **2009**, 10, 2620 - 2623.
28. Hill, S.E., Bandaria, J.N., Fox, M., Vanderah, E., Kohen, A., and Cheatum, C.M.*, “Exploring the Molecular Origins of Protein Dynamics in the Active Site of Human Carbonic Anhydrase II”, *J. Phys. Chem. B.* **2009**, 113, 11505 - 11510.
29. Yahashiri, A., Sen, A., and Kohen, A.*, “Microscale synthesis and kinetic isotope effect analysis of (4R)-[Ad-¹⁴C, 4-²H] NADPH and (4R)-[Ad-³H,4-²H] NADPH”, *J. Labeled Comp. Radiopharma*, **2009**, 52 463–466.
30. Bandaria, J., Cheatum, C.M., and Kohen, A.*, “Examination of enzymatic H-tunneling through kinetics and dynamics”, *J. Am. Chem. Soc.*, **2009**, 131, 10151–10155.
31. Koehn, E.M.; Fleischmann, T., Conrad, J.A., Palfey, B., Lesley, S.A.; Kohen, A.*, “An unusual mechanism of thymidylate biosynthesis in organisms containing the *thyX* gene” *Nature* **2009**, 458 919-923.
32. Wang, Z., Chernyshev, A., Koehn, E.M., Manuel, A., Lesley, S.A., and Kohen, A.*, “Oxidase Activity of a Flavin-Dependent Thymidylate Synthase”, *FEBS J.*, **2009**, 276, 2801–2810.
33. Stojković, V.; Kohen A.*, “Enzymatic H-transfers: Quantum Tunneling and Coupled Motion from Kinetic Isotope Effect Studies”, *Isr. J. Chem.* **2009**, 49, 163-173 (Invited Review).

34. Sen, A., and Kohen, A.*, “Quantum Effects in Enzyme Kinetics”, in *Quantum Tunneling in Enzyme Catalyzed Reactions*, Allemann, R. and Scrutton, N., Eds, Royal Society of Chemistry, London, UK, **2009**, Ch. 7, pp.161-178. ISBN 978-0-85404-122-0
35. Kanaan, N.; Marti, S.*; Moliner, V.*; Kohen, A., “QM/MM study of Thymidylate Synthase: Enzymatic motions and the temperature dependence of the rate-limiting step”, *J. Phys. Chem. A* **2009**, *113*, 2176–2182 (Special Issue on Chemical Dynamics: Max Wolfsberg Festschrift, Sharon Hammes-Schiffer Ed.).
36. Kohen A., Spotlight: “Deep Tunneling Dominates the Biologically Important Hydride Transfer Reaction from NADH to FMN in Morphinone Reductase” *J. Am. Chem. Soc.* **2008**, (invited Spotlight on *JACS* **2008**, *130*, 7092, <http://pubs.acs.org/JACSbeta/jvi/issue3.html>).
37. Yahashiri, A.; Howell, E.E.; Kohen, A.*, “Tuning of the H-Transfer Coordinate in Primitive vs. Well-Evolved Enzymes”, *ChemPhysChem* **2008**, *9*, 980-982.
38. Bandaria, J., Dutta, S., Hill, S., Kohen, A., and Cheatum, C.*, “Fast Enzyme Dynamics at the Active Site of Formate Dehydrogenase”, *J. Am. Chem. Soc.* **2008**, *130*, 22-23 (Communication).
39. Hong, B., Maley, F, and Kohen, A.*, “Role of Y94 in Proton and Hydride Transfers Catalyzed by Thymidylate Synthase”, *Biochemistry.*, **2007**, *46*, 14188-14197.
40. Chernyshev, A., Fleischmann, T., Koehn, E., Lesley, S.A., and Kohen, A.*, “The relationships between oxidase and synthase activities of flavin-dependent thymidylate synthase (FDTS)”, *Chem. Commun.* **2007**, 2861 - 2863.
41. Kanaan, N., Marti, S.*, Moliner, V.*, and Kohen, A., “A QM/MM Study of the catalytic mechanism of the thymidylate synthase”, *Biochemistry* **2007**, *46*, 3704-3713.
42. Chernyshev, A., Fleischmann, T., and Kohen, A.*, “Enzymes of thymidyl biosynthesis as antibiotic targets”, *Appl. Microbiol. Biotech.* **2007**, *74*, 282-289 (invited review).
43. Kohen, A.*, “Coupled motion and dynamics in enzyme catalysis”, in *Hydrogen-Transfer Reactions*, Hynes, J.T., Klinman, J.P., Limbach, H.H., Schowen, R.L. Eds., Wiley VCH, Weinheim, **2007**, Vol. 4, Ch. 12, pp. 1311-1340 [invited chapter].
44. Kohen, A.*, “Kinetic isotope effects as probes for hydrogen tunneling in enzyme catalysis” in *Isotope Effects in Chemistry and Biology*, Kohen, A. and Limbach, H.H. Eds., Taylor & Francis -CRC Press, Boca Raton, FL, **2006**, Ch. 28, pp-743-764. ISBN 0824724496 [invited chapter]
45. Wang, L., Goodey, N.M., Benkovic, S.J.*, and Kohen, A.*, "Coordinated Effects of Distal Mutations on Environmentally Coupled Tunneling in Dihydrofolate Reductase", *Proc. Natl. Acad. Sci. USA* **2006**, *103*, 15753–15758.
46. Markham, K.A., and Kohen, A.*, “Analytical Procedures for the Preparation, Isolation, Analysis and Preservation of Reduced Nicotinamides”, *Curr. Anal. Chem.*, **2006**, *2*, 379-388 (invited review).
47. Hong, B., Haddad, M., Maley, F., Jensen, J.H., and Kohen, A.*, “Hydride transfer versus hydrogen radical transfer in thymidylate synthase”, *J. Am. Chem. Soc.* (communication) **2006**, *128*, 5636 – 5637.

48. Mason, A., Agrawal, N., Washington, T., Lesley, S.A., and Kohen, A.*, "A lag-phase in the reduction of flavin-dependent thymidylate synthase (FDTS) revealed a mechanistic missing link", *Chem. Commun.* **2006**, 1781 - 1783.
49. Limbach, H.H.*, Lopez, J.M., and Kohen, A., "Arrhenius curves of hydrogen transfers: Tunnel effects, isotope effects and effects of pre-equilibria", *Phil. Trans. R. Soc. B*, **2006**, 361,1399 - 1415.
50. Wang, L., Goodey, N.M., Benkovic, S.J., and Kohen, A.*, "The role of enzyme dynamics and tunneling in catalyzing hydride transfer: studies of distal mutations of dihydrofolate reductase", *Phil. Trans. R. Soc. B*, **2006**, 361, 1307-1215.
51. Wang, L., Tharp, S., Seltzer, T., Benkovic, S.J., and Kohen, A.*, "Effects of a distal mutation on active site chemistry", *Biochemistry*, **2006**, 45, 1383-1392.
52. Pu, J., Ma, S., Garcia-Viloca, M., Gao, J.,* Truhlar, D.G.,* and Kohen, A., "Nonperfect synchronization of reaction center rehybridization in the transition state of the hydride transfer catalyzed by dihydrofolate reductase", *J. Am. Chem. Soc.* **2005**, 127, 14789-14886.
53. Hong, B. and Kohen, A.*, "Microscale synthesis of isotopically labeled 6R-N⁵, N¹⁰ methylene-5, 6, 7, 8-tetrahydrofolate", *J. Labeled Comp. Radiopharma.* **2005**, 48, 759-769.
54. Sra, A.K., Hu, Y. Martin, G.E., Snow, D.D., Ribbe, M.W., and Kohen, A.*, "Competitive ¹⁵N Kinetic Isotope Effects of Nitrogenase Catalyzed Dinitrogen Reduction", *J. Am. Chem. Soc.* **2004**, 126, 12768-12769.
55. Agrawal, N., Lesley, S., Kuhn, and Kohen, A.*, "Mechanistic Studies of a Flavin-Dependent Thymidylate Synthase", *Biochemistry* (Accelerated Publication), **2004**, 43, 10295-10301.
56. Sikorski, R. S., Wang, L., Markham, K. A., Rajagopalan, P. T. R., Benkovic, S. J., and Kohen, A.*, "Tunneling and Coupled Motion in the *E. coli* Dihydrofolate Reductase Catalysis", *J. Am. Chem. Soc.* **2004**, 126, 4778-4779.
57. Agrawal, N., Hong, B., Mihai, C., and Kohen, A.*, "Vibrationally Enhanced Hydrogen Tunneling in the *E. coli* Thymidylate Synthase Catalyzed Reaction", *Biochemistry* **2004**, 43, 1998-2006.
58. Markham, K.A., Sikorski, R.S. and Kohen, A.*, "Synthesis and utility of ¹⁴C-labeled nicotinamide cofactors", *Anal. Biochem.* **2004**, 325, 62-67.
59. Agrawal, N., Mihai, C., and Kohen, A.*, "Microscale synthesis of isotopically labeled (R)-[6-^XH]N⁵, N¹⁰-methylene-5,6,7,8-tetrahydrofolate as a cofactor for thymidylate synthase", *Anal. Biochem.* **2004**, 328, 44-50.
60. McCracken J.A., Wang, L. and Kohen, A.*, "Synthesis of R and S tritiated reduced nicotinamide adenine dinucleotide 2' phosphate", *Anal. Biochem.* **2004**, 324, 131-136.
61. Markham, K.A., Sikorski, R.S. and Kohen, A.*, "Purification, analysis, and preservation of reduced nicotinamide adenine dinucleotide 2' phosphate", *Anal. Biochem.* **2003**, 322, 26-32.
62. Agrawal, N. and Kohen, A.*, "Microscale Synthesis of 2-tritiated isopropanol and 4R-tritiated reduced nicotinamide adenine dinucleotide phosphate", *Anal. Biochem.* **2003**, 322, 179-184.
63. Kohen, A.*, "Kinetic isotope effects as probes for hydrogen tunneling, coupled motion and dynamics contributions to enzyme catalysis", *Prog. React. Kin. Mech.* **2003**, 28, 119-156. [Review]

64. Kohen, A.* and Jensen J.H., “Boundary Conditions for the Swain-Schaad Relationship as a Criterion for Hydrogen Tunneling”, *J. Am. Chem. Soc.* **2002**, 124, 3858-3864.
65. Sra, A.K. and Kohen, A.*, “Nitrogenase catalyzed dinitrogen reduction – a new mechanistic approach” In *Nitrogen fixation Global Perspectives*; Finan, T. M., O'Brian, M. R., Layzell, D. B., Vessey, J. K., Newton, W., Eds.; CABI Publishing: Oxon, New York; **2002**, p 371.
66. Truhlar, D. G.* and Kohen, A.*, “Convex Arrhenius plots and their interpretation”, *Proc. Natl. Acad. Sci. USA* **2001**, 98, 848-851.

Book Edited

Isotope Effects in Chemistry and Biology. Kohen, A. and Limbach, H.H. Eds., Taylor & Francis - CRC Press, Boca Raton, FL, **2006**, ISBN: 0824724496.

Manuscripts in Preparation

1. Roston, D, Cheatum, C.M., Kohen, A.*, “Hydrogen Donor-Acceptor Fluctuations from Kinetic Isotope Effects: A Phenomenological Model”, in preparation for *Biochemistry*.
2. Sen, A., Stojković, V., and Kohen, A.*, “Synthesis of radiolabeled nicotinamide cofactors from labeled pyridines: versatile probes for enzyme kinetics”, in preparation for *Anal. Biochem.*
3. Dutta, S., Li, Y-L., Houtman, J.C.D., Kohen, A., Cheatum C.M.*, “3-Picolyl Azide Adenine Dinucleotide as a Probe of Femtosecond to Picosecond Enzyme Dynamics”, In preparation to *J. Phys. Chem. B.*
4. Yahasiri, A., Kohen, A.*, “Dihydrofolate reductase catalyzed reduction of dihydrobiopterin: The role of the tail”, in preparation for *Biochemistry*.
5. Roston, D., Hong, B., Mihai, C., and Kohen, A.*, “2° Kinetic isotope effect studies with thymidylate synthase as a probe for combined methylene-hydride transfer”, in preparation for *Biochemistry*.
6. Hong, B., Maley, F., and Kohen, A.*, “Studies of a thymidylate synthase from *B. subtilis*”, in preparation for *Biochemistry*.

Press Exposure

1. [UI chemists publish findings on how enzyme motion affects chemical reactions](#), *University of Iowa News Release*, Sept. 29, **2010**.
2. [Biochemistry: Anchors away](#), Maria Paola Costi & Stefania Ferrari, *Nature* **2009**, 458, 840-841. A *Nature* “News and Views” covering our *Nature* paper in the same issue (*Nature* **2009**, 458, 919-923).
3. Partial list of press releases related to our *Nature* **2009**, 458, 919-923:
 - a. [UI chemists' DNA biosynthesis discovery could lead to better antibiotics](#), *University of Iowa News Release*, Apr. 15, 2009.
 - b. [Scientists discover new chemical reaction for DNA production in bacteria and viruses](#), *National Science Foundation News*, Press Release 09-072, Apr. 16, 2009.
 - c. [New Chemical Reaction For DNA Production In Bacteria And Viruses Has Potential For Development Of New Antibacterial And Antiviral Drugs](#), *Medical News Today*, Apr. 18, 2009 (linked from [Medical New Today](#) and [MediLexicon](#)).

- d. An Unusual Mechanism for the Antimicrobial Target Flavin-dependent Thymidylate Synthase (FDTS), [Stanford Synchrotron Radiation Lightsource](#) (scientific highlight), Apr. 27, 2009.
- e. Antibiotic target *Nature Structural Genomics* PSI-SGKB [doi:10.1038/fa_psisgkb.2009.33] Research Advances http://kb.psi-structuralgenomics.org/update/2009/08/full/fa_psisgkb.2009.33.html, July 16, 2009.
4. [Enzymes' Many Movements](#), *C&EN* **2009**, 87 (17), 34-36. An article covering a symposium Kohen and Warshel co-organized at the Spring 2009 ACS national meeting in Salt Lake City Utah.
5. Chemical Biology, Issue 8, 2007, presents: "The relationships between oxidase and synthase activities of flavin-dependent thymidylate synthase (FDTS), Anatoly Chernyshev, Todd Fleischmann, Eric M. Koehn, Scott A. Lesley and Amnon Kohen, *Chem. Commun.*, **2007**, 2861-2863".
6. Warfield, R., "FAD stage down to the dumps: Exploring the mechanism of a thymidylate synthase", *Chemical Biology*, **2006**, vol. 1, page B19, Royal Society of Chemistry Publishing (on-line Apr. 16, at www.rsc.org/ChemBiology).
7. Nigel S. Scrutton, Michael J. Sutcliffe, and P. Leslie Dutton, "Quantum catalysis in enzymes: beyond the transition state theory paradigm. A Discussion Meeting held at the Royal Society on 14 and 15 November 2005" *J. Royal. Chem. Soc. Interface*, doi:10.1098/rsif.2006.0122, published on-line March 21, **2006**.
8. Borman S., "Much Ado About Enzyme Mechanisms", *C&E News* **2004**, Feb. 23, 35-39.
9. Wilson E.K., "Enzyme Dynamics", *C&E News* **2000**, July 17, 42-45.

Publications resulting from work performed prior to the appointment at Iowa

1. Kohen, A. and Klinman, J.P.*, "Protein flexibility correlate with degree of hydrogen tunneling in thermophilic and mesophilic alcohol dehydrogenase", *J. Am. Chem. Soc.* **2000**, 122, 10738-10739.
2. Kohen, A. and Klinman, J.P.*, "Hydrogen tunneling in biology", *Chemistry & Biology* **1999**, 6, R191-198.
3. Kohen, A., Cannio, R., Bartolucci, S., and Klinman, J.P.*, "Enzyme dynamics and hydrogen tunneling in a thermophilic alcohol dehydrogenase", *Nature* **1999**, 399, 496-499.
4. Liang, P.H., Lewis, J., and Anderson, K.S., Kohen, A., D'Souza, F.W., Benenson, Y., and Baasov, T.* "Catalytic mechanism of KDO8P synthase: transient kinetic studies and evaluation of a putative reaction intermediate", *Biochemistry* **1998**, 37, 16390-16399.
5. Kohen, A., Cannio, R., Bartolucci, S., and Klinman, J.P.*, "Beyond the classics: Hydrogen tunneling in enzyme reaction", *Biophys. J.* **1998**, 74, A117-A117.
6. Kohen, A. and Klinman, J.P.*, "Enzyme catalysis: beyond classical paradigms", *Acc. Chem. Res.* **1998**, 31, 397-404.
7. Kohen, A., Cannio, R., Bartolucci, S., and Klinman, J.P.*, "Thermophilic dehydrogenase: Hydrogen tunneling at high and low temperature", *FASEB J.* **1997**, 11, A1134-A1134.
8. Liang, P.H., Kohen, A., Baasov, T., and Anderson, K.S.*, "Catalytic mechanism of KDO8P synthase. Pre-steady-state kinetic analysis using rapid chemical quench flow methods", *Bioorganic & Medical Chem. Lett.* **1997**, 7, 2463-2468.

9. Kohen, A., Jonsson, T., and Klinman, J.P.*, "Effects of protein glycosylation on catalysis: Changes in hydrogen tunneling and enthalpy of activation in the glucose oxidase reaction", *Biochemistry* **1997**, 36, 2603-2611.
10. Kohen, A., Jonsson, T., and Klinman, J.P.*, "Effect of enzyme glycosylation on the chemical step of catalysis, as probed by hydrogen tunneling and enthalpy of activation", *Tech. Prot. Chem. VIII*, D. R. Marshak Ed., **1997**, pp. 311-319.
11. Baasov, T.* and Kohen, A. "Synthesis, inhibition and acid-catalyzed hydrolysis studies of model compounds of the proposed intermediate in the KDO8P synthase catalyzed reaction", *J. Am. Chem. Soc.* **1995**, 117, 6165-6174.
12. Kohen, A., Belakhov, V., and Baasov, T.*, "Towards the synthesis of the putative reaction intermediate in the KDO8P synthase - catalyzed reaction. Synthesis and evaluation of 3-deoxy-D-manno-octulosonate-2-phosphate", *Tetrahedron. Lett.* **1994**, 35, 3179-3182.
13. Baasov, T.*, Sheffer-Dee-Noor, S., Kohen, A., Jakob, A., and Belakhov, V. "Catalytic mechanism of 3-deoxy-D-manno-octulosonate-8-phosphate synthase. The use of synthetic analogues to probe the structure of the putative reaction intermediate", *Eur. J. Biochem.* **1993**, 217, 991 – 999.
14. Kohen, A., Berkovich, R., Belakhov, V., and Baasov, T.*, "Stereochemistry of the KDO8P synthase. An efficient synthesis of the 3-fluoro analogues of KDO8P", *Bioorganic & Medical Chem. Lett.* **1993**, 3, 1577-1582.
15. Kohen, A., Jakob, A., and Baasov, T.*, "Mechanistic studies of 3-deoxy-D-manno-octulosonate-8-phosphate synthase from *Escherichia coli*", *Eur. J. Biochem.* **1992**, 208, 443-449.

DOE

Role: co-PI

Sponsor: US Department of Energy (DOE)

Title: Radiochemistry and Nuclear Medicine Training Projects of Excellence at the University of Iowa (PI: Tewson)

Amount: Total \$2,265,000 for Kohen direct cost \$125,000/year

Duration: Jan. 2013 – Dec. 2016

INSTRUMENTATION & INFRASTRUCTURE:

Chemistry Shared instrumentation facility

Role: Contributor

Sponsor: Roy J. Carver Charitable Trust

Title: Acquisition of an Isothermal Titration Calorimetry and a Size Exclusion Separation Apparatus.

Amount: \$230,689

Awarded: January 2012

TRAINING GRANTS

NIH – T32

Role Co-Director (Director: Quinn)

Sponsor: National Institutes of Health (NIGMS)

Title: Predocutorial Training Program in Biotechnology

Amount: \$1,019,700

Duration: July 2011 – June 2016

MSTP Training Grant

Role: Co-PI (Mike Knudson PI)

Sponsor: National Institutes of Health

MCB Training Grant

Role: Co-PI (Jackie Bickenbach PI)

Sponsor: National Institutes of Health

PAST GRANTS:

NSF (Renewal of the 2002 CAREER AWARD)

Role: PI

Sponsor: National Science Foundation (CHE – Experimental Physical Chemistry)

Title: Protein dynamics and hydrogen tunneling in enzymatic catalysis (PI: Kohen)

Amount: \$500,000

Duration: Aug 2007 – July 2011 plus one year “no-cost extension”

Clinical and Translational Science Award

Role: PI

Sponsor: Institute for Clinical Translational Science (ICTS)

Title: New PET imaging of cancerous tumors

Amount: \$50,000

Duration: June 2009 – May 2010

Faculty Scholars Award (supplemental)

Role: PI

Sponsor: University of Iowa

In addition to half my salary, each year I received \$5,500 as supplemental funding from the UI Office of the Provost.

Duration: 2007 – May 2010

ICRU Scholar Assistant program

Role: PI

Sponsor: University of Iowa

Title: Mechanistic Studies of TSase from *E. coli* (PI: Kohen; Advisee: Michael Toraason)

Amount: \$2,500

Duration: June. 2010 – Aug. 2010

ICRU Scholar Assistant program

Role: PI

Sponsor: University of Iowa

Title: Isotopic labeling of nicotinamides (PI: Kohen; Advisee: Hyun Jo)

Amount: \$2,500

Duration: Oct. 2008 – May 2009

NIH-RO1

Role: PI

Sponsor: National Institutes of Health (NIGMS)

Title: Tunneling and dynamics studies with DHFR (PI: Kohen)

Amount: \$884,400

Duration: July 2002 – June 2008

NSF CAREER

Role: PI

Sponsor: National Science Foundation (CHE – Experimental Physical Chemistry)

Title: CAREER: Protein dynamics and hydrogen tunneling in enzymatic catalysis (PI: Kohen)

Amount: \$440,500

Duration: June 2002 – May 2007

Herman Frasch Grant

Role: PI

Sponsor: Herman Frasch Foundation

Title: Studies of nitrogen fixation by the enzyme nitrogenase (PI: Kohen)

Amount: \$200,000

Duration: July 2002 – June 2007

IREU – Iowa Research Experience for Undergraduates Role: PI

Sponsor: University of Iowa

Title: Flavin-dependent thymidylate synthase (PI: Kohen)

Amount: \$3,000

Duration: Dec. 2006 – Aug. 2007 (to sponsor Undergraduate research).

IREU – Iowa Research Experience for Undergraduates Role: PI

Sponsor: University of Iowa

Title: 2 KIE studies of nicotinamide dependent enzymes (PI: Kohen)

Amount: \$3,000

Duration: Dec. 2004 – Aug. 2005 (to sponsor Undergraduate research).

NIH – R21

Role: PI

Sponsor: National Institutes of Health

Title: Mechanistic studies of nitrogenase catalysis (PI: Kohen)

Amount: \$220,500

Duration: July 2002 – June 2004

ACS – PRF, Type G

Role: PI

Sponsor: American Chemical Society, Petroleum Research Fund

Title: C-H bond activation in enzyme catalyzed reaction (PI: Kohen)

Amount: \$25,000

Duration: Sep. 2001 – Sep. 2003

ACS – PRF, Type SE

Role: PI

Sponsor: American Chemical Society, Petroleum Research Fund

Title: Symposium on structure-function correlation in enzyme action (PI: Kohen)

Amount: \$3,600

Duration: Apr. 2002

Biosciences Initiative – Pilot Grant Program

Role: PI

Sponsor: University of Iowa

Title: The role of protein dynamics coupled motion and tunneling in enzyme catalysis
(PI: Kohen)

Amount: \$50,000

Duration: Nov. 2000 – June 2001

CIFRE (Central Investment Fund for Research Enhancement) Role: PI

Sponsor: University of Iowa

Title: Biological catalysis – mechanistic studies (PI: Kohen)

Amount: \$9,977

Duration: Jan. 2000 – June 2000

Invited lectures

External invited lectures: Conferences

1. "The role of dynamics and H-tunneling in enzyme catalysis", Zing conference on Enzymes, Coenzymes, and Metabolic Pathways, Occidental Grand Xcaret resort, Mexico, November 17-21, **2011**.
2. "Intrinsic kinetic isotope effects in enzymology", ISOTOPE 2011, Gréoux-les-Bains, France, June 20-24, **2011**.
3. "Thymidylate synthase: Quantitative and qualitative mechanistic studies", Klinman Symposium, Berkeley, CA, April 16-17, **2011**.
4. "Paths of *de novo* thymidylate biosynthesis", 19th International Roundtable on Nucleosides, Nucleotides and Nucleic Acids, Lyon, France, Aug. 29 - Sept. 3, **2010**.
5. "Enzymatic H-Transfer: From Organic Mechanisms to Quantum Effects", Theoretical Chemistry Symposium. Lodz, Poland, March 30-31, **2010**.
6. "Qualitative and quantitative use of isotopes in mechanistic studies of enzymes", Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 14-19, **2010**.
7. "Enzyme catalyzed H-transfer: The role of coupled environmental dynamics", 2010 Gentner Symposium on "Proton Mobility in Chemical and Biological Systems", Ma`agan Holiday Village, Israel, Feb. 7-12, **2010**.
8. "Alternative thymidylate synthase", The Annual Meeting of the Israeli Society of Biochemistry and Molecular Biology (ISBMB), Rechovot, Israel, Feb. 4, **2010**.
9. "The role of enzyme dynamics in C-H bond activation", Telluride Science Research Center Workshop on Protein Dynamics, Telluride, Colorado, Aug. 3 - 7, **2009**.
10. "An unusual mechanism of thymidylate biosynthesis in organisms containing the thyX gene", Gordon Research Conference on Nucleosides, Nucleotides, and Oligonucleotides, Salve Regina University, Newport, RI, July 5-10, **2009**. [*I could not make it to this meeting and my student, Eric Koehn, presented on our behalf*]
11. "Isotopic labeling and kinetic isotope effects in Enzymology", Isotope 2009, Cluj - Napoca, Romania, May 25 - 29, **2009**.
12. "Protein Dynamics and Enzyme Catalysis – Environmentally Coupled Hydrogen Tunneling", A Mesilla Chemistry Workshop "Multi-Scale Modeling of Biological Molecules" Meson de Mesilla, NM, Feb. 4-7, **2009**.
13. "Environmental dynamics in enzyme catalyzed reactions", Second International Interdisciplinary Conference on Vitamins, Coenzymes and Biofactors (2nd IICVCB), Athens, GA, Oct. 26-31 **2008**.
14. "KIEs and their temperature dependency as probes for dynamics and coupling", Conference on Protein Dynamics and Catalysis Tarrytown, NY, May 2-4, **2008**.
15. "H-tunneling in enzymatic systems", Israel Science Foundation Workshop on Diffusion, Solvation, and Transport of Protons in Complex and Biological Systems, Eilat, Israel, Jan. 13-17, **2008**.
16. "Enzymatic redox reactions: Hydride and proton transfer mechanisms using kinetic isotope effects", Stable Isotope Tools for the Assessment of Chemical and Microbial Transformation Reactions in Complex Natural and Contaminated Environments, Mt. Verità, Switzerland, Nov. 18- 23, **2007**.
17. "The Temperature Dependence of Isotope Effects in Biological Catalysis", Quantum Atomic and Molecular Tunneling in Solids & other Condensed Phases, Huston, TX, Oct. 28-Nov.1, **2007**.

18. "Intrinsic Kinetic Isotope Effects As Mechanistic Probes in Enzymology", Isotope 2007, Benicassim, Spain, May 27-June 1, **2007**.
19. "A Network of Coupled Motions and H-Tunneling in Enzyme Catalysis", 20th Enzyme Mechanisms Conference St. Pete Beach, FL, Jan. 3-6th, **2007**.
20. "H-transfer in Enzymology", Chem06 University of Cairo, Egypt, 5-8th Mar. **2006**.
21. "Effects of Distal Mutations on Enzymatic Activity as Probed by Vibrationally Coupled Tunneling", Royal Society Meeting on "Quantum Catalysis in Enzymes- Beyond the Transition State Theory Paradigm", London UK, Nov. 14-16 **2005**.
22. "Tunneling and coupled motion in enzymatic catalysis", International Conference on Quantum Atomic and Molecular Tunneling in Solids (QAMTS), Santiago de Compostela, Spain, July 19-21, **2005**.
23. "Isotope effects as probes for tunneling and coupled motion in enzyme catalysis", Isotopes 2005, Bath UK, June 27-30 **2005**.
24. "Protein dynamics role in enzyme catalysis", Conference by the Mathematical Biosciences Institute on "Enzyme Dynamics", Columbus, OH, May 19-21, **2005**.
25. "Nitrogenase catalyzed N₂ reduction: ¹⁵N isotope effects studies", Gordon Research Conference on Nitrogen Fixation, Colby Sawyer College, NH, July 20-25, **2004**.
26. "Coupled motion and H-tunneling in the dihydrofolate reductase reaction", 56th Harden Conference - Biological Electron and Proton Transfer. University of Plymouth, UK, Aug. 26-30 **2003**.
27. "H-Tunneling and Coupled Motion in Enzyme Catalysis". International Conference on Quantum Atomic and Molecular Tunneling in Solids (QAMTS), Gainesville, FL, June 22-25, **2003**.
28. "Kinetic Isotope Effects in Enzymology", 54th Harden Conference on 'Enzymology: emerging trends and future prospects', Ambleside (Cumbria), UK. Aug. 20-24, **2002**.
29. "Enzyme Catalysis: the Role of H-Tunneling and Protein Dynamics", 10th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 22-24, **2001**.
30. "Competitive Kinetic Isotope Effects with 2'-Phosphate Nicotine-Adenine-Dinucleotide", 2001 – An Isotope Odyssey, Zakopane, Poland, June 24-29, **2001**.
31. "Enzyme Dynamics and Catalysis Relationship As Probed by H-Tunneling and Coupled Motion", 20th Midwest Enzyme Chemistry Conference, Chicago, IL, Sep. 23, **2000**.
32. "Protein Dynamics and Enzyme Catalysis - Vibrationally enhanced Hydrogen Tunneling", Third Mesilla Chemistry Workshop "Dynamics of Enzyme-Catalyzed Reactions" Meson de Mesilla, NM, Feb. 6-9, **2000**.
33. "Enzyme Dynamics and Hydrogen Tunneling in a Thermophilic Alcohol Dehydrogenase", Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Holiday Inn, Ventura, CA, Jan. 9-14, **2000**.

Contributed Talks (Chosen by organizers based on submitted abstract)

1. "Mechanistic studies of thymidylate Synthases", Texas Enzyme Mechanisms Conference, Austin Jan. 8, **2012**.
2. "Structure-dynamics-function relationship. A new perspective", 237th ACS National Meeting, Salt Lake City, Utah, Mar. 22-26, **2009**.

3. "H-tunneling in enzymatic systems", Symposium on Computational Chemical Dynamic: From Gas-Phase to Condensed-Phase Systems, University of Minnesota, Minneapolis, MN, Oct. 7-9, **2004**.
4. "Environmentally Coupled Tunneling in Enzymatic Hydride Transfer Reactions", Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Holiday Inn, Ventura, CA, Feb. 15-20, **2004**.
5. "Studying the chemical step in enzyme catalysis", 223rd ACS National Meeting, Orlando, FL, Apr. 7-11, **2002**.

External invited lectures: Universities

1. "Physical and Organic Mechanisms in Enzymology", Umeå, Sweden, March 6, **2012**.
2. "Quantum and Dynamics Effects in biological Redox Reactions Involving C-H Bond Activation", The Technion-Israel Institute of Technology, Haifa, Israel, Feb 28, **2012**.
3. "Physical and Organic Mechanisms in Enzymology: Thymine Biosynthesis", Department of Chemistry, University of Kansas, Lawrence, KN, Nov 11, **2011**.
4. "Physical and Organic Mechanisms in Enzymology", Department of Chemistry, Wichita State University, Wichita, MI, Nov 2, **2011**.
5. "Enzyme Mechanisms: Physical and Organic Chemistry Perspective", Department of Medicinal & Bioorganic Chemistry, University of Maryland at Baltimore Co, Oct 26, **2011**.
6. "Enzymology: from physical and organic mechanisms to biochemical pathways", Department of Chemistry and Biochemistry, University of Texas, Arlington, TX, Oct 21, **2011**.
7. "Resolving the alcohol dehydrogenase paradox", Department of Chemistry, Lodz University, Poland, March 23, **2010**.
8. "Enzyme dynamics and H-tunneling in the dihydrofolate reductase reaction", Department of Biochemistry, Tel-Aviv University, Israel, Feb. 2, **2010**.
9. "Thymidylate synthases: From organic mechanisms to physical studies", Department of Biochemistry, Pennsylvania State University, Oct 6, **2009**.
10. "Mechanisms of C-H bond Activation in enzyme catalysis: From arrow-pushing to quantum mechanics", Department of Chemistry and Chemical Biology, Rensselaer Polytechnic Institute, Troy, NY, July 22, **2009**.
11. "Dihydrofolate reductase as a model for enzyme structure-dynamics-function relationship", Division of Structural Biology, The Weizmann Institute of Science, Rehovot, Israel, June 30, **2009**.
12. "Mechanisms of C-H bond activation in enzyme catalysis", Colloquium at the School of Chemistry, The Tel Aviv University, Tel Aviv, Israel, June 9, **2009**.
13. "Physical description of enzyme catalyzed H-transfer", Colloquium at the Department of Chemistry, The Weizmann Institute of Science, Rehovot, Israel, June 8, **2009**.
14. "Quantum tunneling in Enzymology", Manchester Interdisciplinary Biocentre, University of Manchester, Manchester, UK, May 14, **2009**.
15. "Mechanistic Studies of Thymidylate Synthases: From QM-Tunneling to Organic Mechanisms", Colloquium at the Department of Chemistry, Technion-Israel Institute of Technology, Haifa, Israel, May 7, **2009**.

16. "Enzyme Catalyzed C-H Bond Activation: Role of H-tunneling and Coupled Dynamics", Department of Chemistry, University of Michigan, Nov. 21, **2008**.
17. "Role of the Protein Dynamics and H-Tunneling in Enzyme Catalysis", Department of Chemistry, Bar Ilan University, Israel, Jan. 23, **2008**.
18. "Enzyme Mechanisms from Isotope Effects", Department of chemistry, University of California, Davis, CA, Nov. 8, **2007**.
19. "Mechanistic studies of flavin-dependent thymidylate synthase", College of Pharmacy, Texas University, Austin, TX, Nov. 17, **2006**.
20. "Distal effects in enzyme catalysis" Department of Biochemistry and Department of Chemistry, Texas A&M University, Collage Station, TX, Nov. 16, **2006**.
21. "Tunneling and vibrational coupling in biological systems", Department of Chemistry, University of Vienna, Vienna, Austria, Oct. 6, **2006**.
22. "The role of protein motion and H-tunneling in thymine biosynthesis", Department of Medicinal Chemistry and Pharmacognosy, University of Illinois at Chicago, Aug. 25, **2006**.
23. "Enzyme dynamics and H-tunneling in Biocatalysis", Department of Biochemistry and Cellular & Molecular Biology University of Tennessee, Knoxville, TN, Apr. 26, **2006**.
24. "Hydrogen transfer in enzyme catalysis: Studies of dihydrofolate reductase and thymidylate synthase", Department of Chemistry and Biochemistry, Texas State University, San Marcos, TX, Apr. 7, **2006**.
25. "H-tunneling and Matrix dynamics in Enzymology", Departmental Seminar at the Department of Chemistry, University of Southern California, Los Angeles, CA, Feb 28, **2006**.
26. "Effects of remote mutations on H-transfer in DHFR catalysis", Department of Chemistry, Cardiff University, UK, Nov. 15, **2005**.
27. "Studies of an alternative thymidylate synthase", Laboratoire d'Optique et Biosciences, Ecole Polytechnique, Palaiseau Cedex, France, Nov. 9, **2005**.
28. "Classical and flavin-dependent thymidylate synthases", departmental seminar at the Department of Chemistry, Universitat Jaume I, Castellon, Spain, July 26 **2005**.
29. "Studying the chemical step in nitrogenase-catalyzed N₂ reduction", departmental seminar at the Department of Chemistry and Biochemistry, UC Irvine, CA, Apr. 15, **2005**.
30. "Mechanistic studies of DHFR and its distal mutants", departmental seminar at the Department of Chemistry, John Hopkins University, MD, Mar. 8, **2005**.
31. "Mechanistic studies of DHFR and its distal mutants", departmental seminar at the Department of Chemistry, University of Delaware, DE, Mar. 7, **2005**.
32. "Protein Dynamics Effects on DHFR Catalysis", Department of Chemistry Colloquium, Utah State University, UT, Mar. 3, **2005**.
33. "Bio-Physical-Organic Chemistry Studies of Enzyme Catalysis", departmental seminar at the Department of Chemistry, University of Northern Iowa, IA, Nov. 11, **2004**.
34. "Mechanistic Studies of Flavin-Dependent Thymidylate Synthase", Rosalind Franklin University of Medicine and Science, Chicago, IL, Nov. 4, **2004**.
35. "Tunneling, Coupled Motion, and Dynamics in Enzymatic Reactions", Department of Chemistry Colloquium, Universitat Autònoma de Barcelona, Barcelona, Spain, Sept. 4, **2003**.

36. "Studying the Chemical Step in Enzyme Catalyzed Reactions", interdepartmental seminar at Universitat Pompeu Fabra, Barcelona, Spain, Sept. 3, **2003**.
37. "Enzyme Dynamics and Hydride Transfer in Biocatalysis", Biochemistry Colloquium. University of Nebraska, Lincoln, NE. Mar. 4, **2003**.
38. "Chemical Catalysis In Biology: How Enzymes Activate C-H bonds", ACS Chapter of Northeast Arkansas meeting. Lyon College, AR. Feb. 25, **2003**.
39. "H-tunneling in Enzymology", Physical Chemistry Seminar at the University of Notre Dame, IN, Nov. 8, **2001**.
40. "Enzyme Catalysis: the Role of Protein Dynamics, H-Tunneling and Coupled Motion", departmental seminar at the Department of Physiology & Biophysics, Albert Einstein College of Medicine, NY, Apr. 12, **2001**.
41. "Kinetic Isotope Effect Studies of H-Tunneling in Enzyme Catalyzed Reactions", Organic Division seminar at the Department of Chemistry, Technion – Israel Institute of Technology, Israel, Nov. 23, **2000**.
42. "Protein Dynamics and Enzyme Catalysis", Departmental Seminar at the Department of Biochemistry, Tel-Aviv University, Israel, Nov. 16, **2000**.

University of Iowa Invited Seminars

1. "Biophysical and Mechanistic Studies of Thymidylate Synthase", Department of Molecular Physiology & Biophysics (Host: Kevin Campbell), March 21, **2012**.
2. "Development of new radio-tracer for cancer imaging", The Iowa Institute for Biomedical Imaging (IIBI) - Weekly Medical Imaging Seminar, March 24, **2011**.
3. "Mechanistic Studies of Enzyme Catalyzed C-H Bond Activation", Department of Chemistry Colloquium, University of Iowa, IA, Oct. 6, **2009**.
4. "Enzyme catalysis: From organic mechanisms to physical studies", Department of Biochemistry, University of Iowa, IA, Sept. 17, **2009**.
5. "Mechanistic Studies of Enzyme Catalyzed C-H Bond Activation", Department of Chemistry colloquium, University of Iowa, IA, Oct. 15, **2004**.
6. "Thymidylate Synthase and Dihydrofolate Reductase: Mechanistic Studies of Enzyme-Catalyzed Hydride Transfer", Department of Biochemistry, University of Iowa, Jan. 29, **2004**.
7. "Hydrogen Tunneling in Enzyme Catalysis", Physical Chemistry seminar at the University of Iowa, Oct. 21, **2002**.
8. "Kinetic Isotope Effects in Studying Hydrogen Tunneling", Medicinal and Natural Products Chemistry seminar, College of Pharmacy, University of Iowa, Mar. 20, **2000**.

Poster and Oral Presentations in Conferences by Students

(Underlined names are presenting authors, and **Oral** Presentations are specified)

Poster and oral presentations of work performed at Iowa:

1. Wang, W., Ferrer, S., Moliner, V., and Kohen, A., "Protein Motions in Thymidylate Synthase Catalyzed Reactions: Experiments and Theories", 14th Jakobsen Graduate Conference, Iowa City, March 23, **2012**. (**Oral presentation**). **2nd Prize for Best Abstract**.
2. Mishanina, T.V., Koehn, E.M., Kohen, A., "Trapping of an intermediate in a novel thymine biosynthesis pathway." 14th Jakobsen Graduate Conference, Iowa City, March 23, **2012**. (**Oral presentation**).
3. Singh, P.N., Stojkovic, V., Kohen, A., "Exploring the Role of Global Networks in Enzymatic Catalysis through the Study of Distal Mutants of Dihydrofolate Reductase Using Primary Kinetic Isotope Effect", 14th Jakobsen Graduate Conference, Iowa City, March 23, **2012**.
4. Roston, D., Cheatum, C.M., Kohen, A.*, "Conformational Distributions at the Tunneling Ready State of H-Transfers", Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 5-10, **2012**.
5. Wang, W., Ferrer, S., Moliner, V., and Kohen, A., "The Role Of Protein Motions In Thymidylate Synthase Catalyzed Reactions: A Hybrid Experimental - Theoretical Study", Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 5-10, **2012**.
6. Saeed, M., Nilaweera, T.D., Kohen, A.*, "Targeting thymidylate synthase activity and folate receptors to assess therapeutic response and cancer imaging by positron emission tomography (PET)", Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 5-10, **2012**.
7. Mishanina, T.V., Koehn, E.M., Kohen, A., "Flavin-dependent thymidylate synthase: trapping of a reaction intermediate", Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 5-10, **2012**.
8. Roston, D., Cheatum, C.M., Kohen, A.*, "Conformational Distributions at the Tunneling Ready State of H-Transfers", Gordon Research Seminar on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 4-5, **2012**. (**Oral presentation**).
9. Saeed, M., Nilaweera, T.D., Kohen, A.*, "Targeting thymidylate synthase activity and folate receptors to assess therapeutic response and cancer imaging by positron emission tomography (PET)", Gordon Research Seminar on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 4-5, **2012**. (**Oral presentation**).
10. Wang, W., Ferrer, S., Moliner, V., and Kohen, A., "The Role Of Protein Motions In Thymidylate Synthase Catalyzed Reactions: A Hybrid Experimental - Theoretical Study", Gordon Research Seminar on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 4-5, **2012**. (**Oral presentation**).
11. Mishanina, T.V., Koehn, E.M., Kohen, A., "Flavin-dependent thymidylate synthase: trapping of a reaction intermediate", Gordon Research Seminar on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 4-5, **2012**.
12. Guo, Q., Cheatum, C.M., Kohen, A., "Characterizing Fast Dynamics at the Active Site of Formate Dehydrogenase Using 3-Picolyl Azide Adenine Dinucleotide", Southeastern Regional Meeting of the American Chemical Society, Richmond, Virginia, Oct. 26-29, **2011**. (**Oral presentation**).

13. Guo, Q., Cheatum, C.M., Kohen, A., “Synthesis of picolyl azide analogues of nicotinamide as potential two-dimensional infrared probes of NAD(P)-dependent enzyme dynamics”, 10th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 17-18, **2011**.
14. Wang, W., Moliner, V., and Kohen, A., “The Role Of Enzyme Dynamics In Thymidylate Synthase Catalyzed Reaction: A Combined Experimental-Theoretical Approach”, 10th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 17-18, **2011**.
15. Roston, D. Cheatum, C.M., Kohen, A.*, “Using Kinetic Isotope Effects to Assess Dynamic Motions of the Substrates in Enzymatic H-Transfers”, XXXI Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 15, **2011. (Oral presentation)**.
16. Mishanina, T.V., Koehn, E.M., Conrad, J.A., Palfey, B.A., Lasley, S.A., Kohen, A.*, “Chemical trapping of an intermediate in the reaction catalyzed by flavin dependent thymidylate synthase”, XXXI Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 15, **2011**.
17. Singh, P., Francis, K., Kohen, A.* “Study of distal mutants of dihydrofolate reductase and exploring the role of global networks in enzymatic catalysis”, XXXI Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 15, **2011**.
18. Wang, Z., Moliner, V., Kohen, A.*, “The dynamics-function relationship in the thymidylate synthase catalyzed reaction: A hybrid experimental-theoretical study”, XXXI Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 15, **2011**.
19. Guo, Q., Pagano, P., Perissinotti, L.L., Cheatum, C.M.,* and Kohen, A.,* “Synthesis of Picolyl Azide Analogues of Nicotinamide as Potential Two-dimensional Infrared Probes of NAD(P)-dependent Enzyme Dynamics”, XXXI Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 15, **2011**.
20. Abesinghe, T., Wang, Z., and Kohen, A.,* “Long range protein effects in catalysis of thymidylate synthase”, XXXI Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 15, **2011**.
21. Saeed, M., Nilaweera, T., Kohen, A.,*, “Targeting Human Thymidylate Synthase Enzyme for the Development of Positron Emission Tomography Tracer to Distinguish Normal from Cancer Cells”, XXXI Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 15, **2011**.
22. Stojkovic, V., Perissinotti, L.L., Lee, J., Benkovic, S.J., Kohen, A.*, “Correlated effects of the donor acceptor distance and its fluctuation on hydride transfer in the Dihydrofolate reductase catalyzed reaction”, 242nd ACS National Meeting that will be held in Denver, Colorado, Aug. 28 – Sept. 1, **2011**.
23. Stojkovic, V., Perissinotti, L.L., Lee, J., Benkovic, S.J., Kohen, A.*, "Dihydrofolate reductase: A correlation between the donor-acceptor distance and its fluctuation to the catalyzed hydride transfer", 42nd Meeting of the ACS Central Region in Indianapolis, IN, June 8 - 10, **2011. (Oral presentation)**.
24. Koehn, E.M., Lesley, S.A., Mathews, I.I., Kohen, A., “Flavin-dependent thymidylate synthase”, 42nd Meeting of the ACS Central Region in Indianapolis, IN, June 8 - 10, **2011. (Oral presentation)**.
25. Wang, Z. Stroud, R.M., Moliner, V., Kohen, A.*, “Thymidilate synthase: Dynamics-functions relationship in enzyme-catalyzed reactions”, ISOTOPE 2011, Gréoux-les-Bains, France, June 20-24, **2011. (Oral presentation)**
26. Roston, D. Cheatum, C.M., Kohen, A.*, “Kinetic isotope effects as a probe of donor-acceptor dynamics in enzyme-catalyzed H-transfers”, ISOTOPE 2011, Gréoux-les-Bains, France, June 20-24, **2011. (Oral presentation)**

27. Stojkovic, V., Perissinotti, L.L., Lee, J., Benkovic, S.J., Kohen, A.*, “Dihydrofolate reductase: A correlation between the donor-acceptor distance and its fluctuation to the catalyzed hydride transfer”, 22 Enzyme Mechanism Conference, St. Pete Beach, FL, Jan 2-6, **2011**.
28. Wang, Z., Kohen, A.*, “Thymidylate synthase catalyzed H-transfers: Role of tunneling and dynamics in different enzyme catalyzed C-H activations”, 22 Enzyme Mechanism Conference, St. Pete Beach, FL, Jan 2-6, **2011**.
29. Koehn, E.M., Lesley, S.A., Mathews, I.I., Kohen, A., “Flavin-dependent thymidylate synthase: Studies towards the development of better antibiotics”, 22 Enzyme Mechanism Conference, St. Pete Beach, FL, Jan 2-6, **2011**.
30. Mishanina, T.V., Kohen, A., “Hunting for an intermediate: Studies of chemical mechanism of flavin-dependent thymidylate synthase”, MWRM Wichita, IL, Oct. 28-29, **2010**.
31. Wang, Z., Kohen, A., “Thymidylate Synthase Catalyzed H-Transfer: Two Chapters in One Tale”, 19th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 18-19, **2010. (Oral Presentation)**.
32. Mishanina, T.V., Kohen, A., “Hunting for an Intermediate: Studies of the Chemical Mechanism of Flavin-Dependent Thymidylate Synthase”, 19th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 18-19, **2010**.
33. Roston, D., Kohen, A., “Kinetic Isotope Effects as a Probe of Donor-Acceptor Dynamics in Enzyme Catalyzed H-Transfer”, 19th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 18-19, **2010**.
34. Toraason, M., Wang, Z., Luzum, C., Kohen, A., “Studies on the Stability of N⁵,N¹⁰-Methylene-5,6,7,8-Tetrahydrofolate”, 19th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 18-19, **2010**.
35. Yahashiri, A., Nixon, R. III, Hashmi, A., Manjunath, N., Toraason, M.J., Sen, A., Kohen, A., “Comparative Cross-Reactivity Kinetic Studies Of *L. major* Pteridine Reductase And *E. coli* Dihydrofolate Reductase”, 19th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 18-19, **2010**.
36. Wang, Z., Kohen, A., “Thymidylate Synthase Catalyzed H-transfers: Two Chapters in One Tale”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010. (Oral Presentation)**
37. Koehn, E.M., Lesley, S.A., Mathews, I.I., Kohen, A., “Thymidylate biosynthesis: Studies towards the development of better antibiotics”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
38. Toraason, M., Wang, Z., Luzum, C., Kohen, A., “Studies on the Stability of N⁵,N¹⁰-Methylene-5,6,7,8-Tetrahydrofolate”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
39. Stojković, V., Perissinoti, L.M., Kohen, A., “Linking Enzyme Dynamics To Catalysis: Studies Of DHFR Active Site Mutants”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.

40. Ditzler L., Sen, A., Gannon, M., Tivanski, A., Kohen, A., “Examination Of Dihydrofolate Reductase Activity On Gold Surfaces Via Molecular Force Recognition Spectroscopy”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
41. Yahashiri, A., Toraason, M.J., Hashmi, A., Nixon, R. III, Manjunath, N., Sen, A., Kohen, A., “Comparative Cross-Reactivity Kinetic Studies Of Pteridine Reductase And Dihydrofolate Reductase”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
42. Roston, D., Kohen, A., “Kinetic Isotope Effects As A Probe Of Donor-Acceptor Dynamics In Enzyme-Catalyzed H-Transfers”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
43. Guo, Q., Chetume, C., Kohen, A., “Characterizing Fast Dynamics at the Active Site of Formate Dehydrogenase”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
44. Mishanina, T.V., Kohen, A., “Hunting for an intermediate: Studies of chemical mechanism of flavin-dependent thymidylate synthase”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
45. Abeyasinghe, T.D., Wang, Z., Kohen, A., “Purification Of R-[6 ^XH] - N⁵, N¹⁰-Methylene-5, 6, 7, 8-Tetrahydrofolate for Studies Thymidylate Synthase”, XXX Midwest Enzyme Chemistry Conference, Northwestern University, Chicago, Illinois, Oct. 16, **2010**.
46. Roston, D., Kohen, A., “Studies of Alcohol Dehydrogenase - Resolving an Old Paradox”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 14-19, **2010**.
47. Wang, Z., Kohen, A., “Exploring the Dynamics-Kinetics Relationship: Kinetic Isotope Effect Studies of *E. coli* *Thymidylate Synthase*”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 14-19, **2010**.
48. Stojkovic, V., Kohen, A., “Effect of Donor-Acceptor Distance on H-Tunneling in Enzyme Catalyzed Reaction: Studies of Active Site Mutants of DHFR”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 14-19, **2010**.
49. Koehn, E.M., Fleischmann T., Lesley, S.A., Mathews, I.I., Kohen, A., “An Unusual Flavin-Dependent Mechanism of Thymidylate Biosynthesis”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 14-19, **2010**.
50. Sen, A., Kohen, A., “The effect of pressure on dihydrofolate reductase and a dynamically-altered mutant”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Hotel Galvez in Galveston, Texas, Feb. 14-19, **2010**.
51. Jean-Gilles, E., Koehn, E.M., Kohen, A., “The Order of Substrates Binding in Enzymatic Reaction” Annual Biomedical Research Conference for Minority Students (ABRCMS) conference, Phoenix, Arizona, Nov. 4 -7, **2009**.
52. Roston, D., Kohen, A., “Studies of Alcohol Dehydrogenase - Resolving an Old Paradox”, 18th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 19-20, **2009. (Oral Presentation)**

53. Wang, Z., Kohen, A., “Exploring the Dynamics-Kinetics Relationship: Kinetic Isotope Effect Studies of *E. coli* Thymidylate Synthase”, 18th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 19-20, **2009**.
54. Luzum, C., Wang, Z., Kohen, A., “The Stability of N⁵,N¹⁰-Methylene-5,6,7,8-Tetrahydrofolate under Physiological Conditions”, 18th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 19-20, **2009**.
55. Mishanina, T.V., Koehn, E.M., Jean-Gilles, E., Wang, Z., Kohen, A., “The Inhibition of Oxidase Activity of Flavin-Dependent Thymidylate Synthase by the Substrate CH₂H₄folate”, 18th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 19-20, **2009**.
56. Yahashiri, A., Hashmi, A., Kohen, A., “Comparison of the Enzymatic H-transfer Reactions of *Leishmania major* Pteridine Reductase 1 and *E. coli* Dihydrofolate Reductase”, 18th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 19-20, **2009**.
57. Yahashiri, A., Jo, H., Nimrod, G., Ben-Tal, N., Howell, E.E., Kohen, A., “Variation of Isotopic Labeling of NADPH and their Application in the Assessment of Accelerated H transfer in Primitive R67 Dihydrofolate reductase at high ionic strength”, 18th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 19-20, **2009**.
58. Dutta, S., Cheatum, C.M., Kohen, A., A New Mid-IR Probe to Investigate Ultrafast Dynamics of Enzymes”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**.
59. Roston, D., Kohen, A., “The Elusive Transition State of Alcohol Dehydrogenase Unveiled”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**. **(Oral Presentation)**
60. Stojkovic, V., Kohen, A., “Effect of Donor-Acceptor Distance on H-Tunneling in Enzyme Catalyzed Reaction: Studies of Active Site Mutants of DHFR”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**. **(Oral Presentation)**
61. Koehn, E.M., Fleischmann, T., Lesley, S.A., Mathews, I.I., Kohen, A., “An Unusual Flavin-Dependent Mechanism of Thymidylate Biosynthesis”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**. **(Oral Presentation)**
62. Sen, A., Kohen, A., “The effect of pressure on dihydrofolate reductase and a dynamically-altered mutant”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**. **(Oral Presentation)**
63. Wang, Z., Kohen, A., “Exploring the Role of Dynamics in Enzymatic Catalysis: Kinetic Isotope Effect Studies of *E. coli* Thymidylate Synthase”. Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**. **(Oral Presentation)**
64. Toraason, Wang, Z., M., Sheff, D., Kohen, A., “Studies On the Stability of [11-¹⁴C]-N⁵,N¹⁰-methylene-5,6,7,8-tetrahydrofolate Under Physiological Conditions”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**.
65. Yahashiri, A., Toraason, M., Kohen, A., “Effective purification and kinetic studies of Pteridine Reductase 1”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**.

66. Yahashiri, A., A., Kohen, A., “Studies of Hydrogen Transfer by E. Coli Chromosomal DHFR on an unnatural substrate”, Midwest Regional Meeting of the ACS (MWRM 2009), Iowa City, IA, Oct. 21-24, **2009**.
67. Stojkovic, V., Kohen, A., “Contribution of Active site Dynamics to Enzyme Catalysis: Study on a Series of Active Site Mutants within Dihydrofolate Reductase (DHFR) from *E.coli*”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**. (**Oral Presentation**)
68. Koehn, E.M., Fleischmann T., Lesley, S.A., Mathews, I.I., Kohen, A., “An Unusual Flavin-Dependent Mechanism of Thymidylate Biosynthesis”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009** (**Oral presentation**).
69. Sen, A., Hay, S., Scrutton, N. Kohen, A., “Pressure dependence of the hydride-transfer step in dihydrofolate reductase and a dynamically altered double mutant”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**.
70. Roston, D., Kohen, A., “Transition State Structure from Anomalous Kinetic Isotope Effects: Experiment and Theory”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**.
71. Wang, Z., Kohen, A., “Probing the Dynamics-Kinetics relationship: Kinetic Isotope Effect Studies of *E. coli* Thymidylate Synthase”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**.
72. Luzum, C., Wang, Z., Kohen, A., “The Stability of N⁵,N¹⁰-methylene-5,6,7,8-tetrahydrofolate under Physiological Conditions”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**.
73. Mishanina, T.V., Jean- Gilles, E., Koehn, E.M., Kohen, A., “Exploring the Mechanism of Flavin-Dependent Thymidylate Synthase”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**.
74. Yahashiri, A., Hashmi, A., Toraason Kohen, A., “Investigation of H-transfer Reaction with *E. coli* Dihydrofolate Reductase and *L. major* Pteridine Reductase 1. ”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**.
75. Hashmi, A., Toraason, M., Yahashiri, A., Kohen, A., “*Leishmania Major* Pteridine Reductase 1 Purification by Use of Methotrexate-Agarose Affinity Chromatography”, XXIX Midwest Enzyme Chemistry Conference, Loyola University, Chicago, Illinois, Oct. 10, **2009**.
76. Koehn, J., Koehn, E.M., Kohen, A., “Synthesis of a Novel Intermediate of Thymidylate Biosynthesis”, Summer Undergraduate Research Conference, UI, July 30, **2009**.
77. Jean-Gilles, E., Koehn, E.M., Wang, Z., Kohen, A., “Inhibition of the Oxidase Activity of Flavin – Dependent Thymidylate Synthase by the Substrate CH₂H₄folate”, Summer Undergraduate Research Conference, UI, July 30, **2009**.
78. Hashmi, A., Toraason, M., Yahashiri, A., Kohen, A., “PTR1 Enzyme Purification”, Summer Undergraduate Research Conference, UI, July 30, **2009**.

79. Koehn, E.M., Fleischmann T., Lesley, S.A., Mathews, I.I., Kohen, A., “Thymine Biosynthesis in Organisms Containing the *thyX* Gene” Gordon Research Conference on Nucleosides, Nucleotides, and Oligonucleotides (GRC - N2O), Salve Regina University, Newport, RI, July 5-10, **2009**. *This is an invited talk and since Kohen could not attend the meeting Koehn presented this talk.*
80. Yahashiri, A., Howell, E.E., Kohen, A., “Has Evolution Tuned Enzyme Dynamics and H-Tunneling?”, 21st Enzyme Mechanisms Conference, Tucson, AZ, Jan. 3-6, **2008**.
81. Koehn, E.M., Fleischmann T., Lesley, S.A., Mathews, I.I., Kohen, A., “A Novel Chemical Mechanism of Thymine Biosynthesis in Organisms Containing the *thyX* Gene”, 21st Enzyme Mechanisms Conference, Tucson, AZ, Jan. 3-6, **2008**.
82. Koehn, E.M., Fleischmann T., Lesley, S.A., Mathews, I.I., Kohen, A., “Chemistry of Thymidylate Synthesis in Organisms Containing the *thyX* Gene”, 17th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 20-21, **2008**.
83. Roston, D., Kohen, A., “Rewinding Yeast Alcohol Dehydrogenase: Tunneling and Coupled Motion in Reverse”, 17th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 20-21, **2008**.
84. Stojković, V., Kohen, A., “Use of Kinetic Isotope Effects to Study the Active Site Dynamics of Dihydrofolate Reductase (DHFR)”, 17th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 20-21, **2008**.
85. Wang, Z., Chernyshev, A., Koehn, E.M., Manuel, A., Lesley, S.A., Kohen, A., “Studies of the Oxidase Activity of a Flavin-Dependent Thymidylate Synthase Reveal Features of the Synthase Activity”, 17th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct 20-21, **2008**.
86. Yahashiri, A., Howell, E.E., Kohen, A., “Proof of Accelerated H-Transfer with Primitive R67 Dihydrofolate Reductase at High Ionic Strength”, 17th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 20-21, **2008**.
87. Jo, H., Yahashiri, A., Stojković, V., Kohen, A., “One-Step Chemo-Enzymatic Micro-Synthesis of Reduced β -nicotinamide Adenine Dinucleotide 2'-Phosphate”, 17th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 20-21, **2008**.
88. Banderia, J.N., Dutta, S., Nydegger, M.W., Rock, W.T., Cheatum, C.M., Kohen, A., “Comparison of Kinetics and Dynamics of Formate Dehydrogenase Using Isotope Effects and Ultrafast Spectroscopy”, 17th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 20-21, **2008**.
89. Stojković, V., Kohen, A., “Kinetic Isotope Effect Studies of Dihydrofolate Reductase (DHFR): The Role of Local Alteration of the Active Site Environment in Catalysis”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
90. Roston, D., Kohen, A., “Tunneling and Coupled Motion in Yeast Alcohol Dehydrogenase”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
91. Jo, H., Yahashiri, A., Stojković, V., Kohen, A., “Chemo-Enzymatic Synthesis of Biologically Important Reagents”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.

92. Wang, Z., Chernyshev, A., Koehn, E.M., Manuel, A., Lesley, S.A., Kohen, A., “Oxidase Activity of Flavin-Dependent Thymidylate Synthase”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
93. Wang, Z., Stroud, R.M., Kohen, A., “Probing the Dynamics-Kinetics Relationship: Studies on *E. coli* Thymidylate Synthase and Its Mutants Distant from the Active Site”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
94. Koehn, E.M., Fleischmann T., Lesley, S.A., Mathews, I.I., Kohen, A., “Determining the Chemical Cascade of the Reaction Catalyzed by Flavin-Dependent Thymidylate Synthase“, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
95. Yahashiri, A., Howell, E.E., Kohen, A., “Accelerated H Transfer of Primitive R67 Dihydrofolate Reductase at High Ionic Strength”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
96. Banderia, J.N., Dutta, S., Nydegger, M.W., Rock, W.T., Cheatum, C.M., Kohen, A., “Study of Kinetic Isotope Effect and Photon Echoes in Formate Dehydrogenase”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
97. Sen, A., Kohen, A., “Exploring the Role of Global Networks in Enzymatic Catalysis: Further Studies with Dynamically Altered Mutants of Dihydrofolate Reductase”, XXVIII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Oct. 4, **2008**.
98. Cheatum, C.M., Banderia, J.N., Hill, S.E., Dutta, S., Kohen, A., “Watching the Protein Mambo: Spectroscopic Probes of Enzyme Dynamics”, 235th ACS National Meeting, New Orleans, LA, Apr. 6-10, **2008**. (Oral)
99. Kohen, A., Yahashiri, A., Howell, E.E., “The Role of Evolution in Tuning Environmentally Coupled Tunneling in Enzymes”. 235th ACS National Meeting, New Orleans, LA, Apr. 6-10, **2008**.
100. Yahashiri, A., Howell, E.E., Kohen, A., “Tuning of the H-Transfer Coordinate in Primitive vs. Well-Evolved Enzymes”, Gordon Research Conferences: Isotopes In Biological & Chemical Sciences, Ventura, CA, Feb. 17-21, **2008**. [Included in the ACS Posters2View™ database].
101. Fleischmann, T., Koehn, E., Kohen A., “Probing the Chemistry of Flavin-Dependant Thymidylate Synthase”, American Chemical Society - Midwest Regional Meeting, Nov. 7 -10, **2007**. [Oral presentation]
102. Sen, A., and Kohen, A., “Secondary Kinetic Isotope Effects Probing the Chemical Step in DHFR”, American Chemical Society - Midwest Regional Meeting, Nov. 7 -10, **2007**. [Oral presentation]
103. Sen, A., and Kohen, A., “Isotopic Labeling of Nicotinamide Co-factors for the Measurement of H/D Kinetic Isotope Effects (KIEs) in Enzymes”, XXVII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, **2007**.
104. Sharma, V., Hong., B., and Kohen, A., “Temperature Dependence on the Proton Abstraction Step in the Catalysis by *Escherichia coli* Thymidylate Synthase”, XXVII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, **2007**.

105. Fleischmann, T., Koehn, E., Kohen A., “Probing a Chemical Mechanism for FDTS”, XXVII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, 2007.
106. Yahashiri, A., Howell, E.E., and Kohen, A., “Evolutionary Prospective on Environmentally Coupled Tunneling: Comparison of the Nature of Hydrogen Transfer between E. Coli Chromosomal DHFR and Plasmid-Coded R67 DHFR”, XXVII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, 2007.
107. Wang, Z., Chernyshev, A., Fleischmann, T., and Kohen, A., “The Competition between O₂ and 5,10-Methylene-5,6,7,8-Tetrahydrofolate in the Oxidative Half Reactions of Flavin-Dependent Thymidylate Synthase”, XXVII Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, 2007.
108. Wang, Z., Chernyshev, A., Fleischmann, T., and Kohen, A. “The Competition between O₂ and 5,10-Methylene- 5,6,7,8-Tetrahydrofolate (CH₂THF) in the Oxidative Half Reaction of Flavin-Dependent Thymidylate Synthase (FDTS)”, Central States Society of Toxicology Annual Meeting, Iowa City, IA, Sept. 20-21, 2007.
109. Yahshiri A., Howell, E.E., and Kohen, a. “Nature of hydrogen transfer in R67 dihydrofolate reductase catalysis: evolutionary prospective on environmentally coupled tunneling ”, Central States Society of Toxicology Annual Meeting, Iowa City, IA, Sept. 20-21, 2007.
110. Haddad, M. and Kohen, A., “The study of flavin-dependent thymidylate synthase in pathogenic organisms”, Annual Biomedical Research Conference for Minority Students (ABRCMS), Anaheim, CA, Nov. 8 - 11, 2006. Abstract published in *FASEB J.* 2007; 21:1b121
111. Wang, L., Goodday, N.M., Benkovic, S. J., and Kohen, A. ”Coordinated effects of distal mutations on environmentally coupled tunneling in dihydrofolate reductase”, XXVI Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, 2006 (oral presentation).
112. Sen, A, Haddad, M., and Kohen, A. ”2° KIE studies of dihydrofolate reductase and its distal mutants”, XXVI Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, 2006.
113. Chernyshev, A., Fleischmann, T., and Kohen, A., “Flavin-dependent thymidylate synthase dual functionality”, XXVI Midwest Enzyme Chemistry Conference, Chicago, Illinois, Sept. 29, 2006.
114. Haddad, M. and Kohen, A., “Flavin-dependent thymidylate synthase”, 7th Research Symposium, Iowa Biosciences Advantage, July 28, 2006 (oral presentation).
115. Haddad, M. and Kohen, A., “2° KIEs as probe of coupled motion in DHFR”, 37th ACS Great Lakes Regional Meeting, Milwaukee, IL, May 30, 2006.
116. Wang, L., Antikainen, N., Benkovic, S. J., and Kohen, A., “The effects of altered dynamics on the chemical step of dihydrofolate reductase”, Gordon Research Conferences: Isotopes In Biological & Chemical Sciences, Ventura, CA, Feb.17-21, 2006 (oral presentation).
117. Hong, B., Agrawal, N., and Kohen, A., “H-Tunneling with Y94F E. coli thymidylate synthase”, 25th Annual Midwest Enzyme Chemistry Conference, Chicago, IL, USA, Oct. 8, 2005.
118. Bandaria, J.N., Gundogdu, C., Hill, S., Cheatum, C., and Kohen, A., “Two dimensional infrared spectroscopy as a new tool in Enzymology”, 25th Annual Midwest Enzyme Chemistry Conference, Chicago, IL, USA, Oct. 8, 2005.

119. Wang, L., Antikainen, N., Benkovic, S. J., and Kohen, A., “The Effects of Altered Dynamics on the Chemical Step of Dihydrofolate Reductase”, 25th Annual Midwest Enzyme Chemistry Conference, Chicago, IL, USA, Oct. 8, **2005**.
120. N. Agrawal, and A. Kohen, “Comparison of flavin-dependent and classical thymidylate synthases”, ASBMB, Experimental Biology Meeting, San Diego, CA, Apr. 2-6, **2005**.
121. N. Agrawal, and A. Kohen, “An alternative flavin-dependent mechanism for biosynthesis of thymidylate synthase”, AAAS Annual Meeting, Washington, DC, Feb. 17-21, **2005**, (oral presentation).
122. L. Wang, S. Tharp, T. Selzer, S.J. Benkovic, and A. Kohen, “The Effects of Altered Dynamics on the Chemical Step of Dihydrofolate Reductase” 14th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 24-26, **2005**, (oral presentation).
123. L. Wang, S. Tharp, T. Selzer, S.J. Benkovic, and A. Kohen, “Enzyme Dynamics and H-tunneling with DHFR”, 19th Enzyme Mechanisms Conference, Asilomar, Pacific Grove, CA, Jan. 5-9, **2005**.
124. B. Hong, N. Agrawal, C. Mihai, and A. Kohen, “Mutational studies of thymidylate synthase”, 19th Enzyme Mechanisms Conference, Asilomar, Pacific Grove, CA, Jan. 5-9, **2005**.
125. N. Agrawal, and A. Kohen, “An alternative flavin-dependent mechanism for biosynthesis of thymidylate, one of the four building blocks of DNA”, 36th ACS Great Lakes Regional Meeting 2004, Peoria, IL, Oct.17-20, **2004**.
126. N. Agrawal, and A. Kohen, “Mechanistic studies of a flavin-dependent thymidylate synthase”, Northeast Regional ACS Meeting at Rochester, Rochester NY, Oct. 31- Nov. 3, **2004**.
127. Wang, L., Thrap, S., Selzer, T., Benkovic, S. J., and Kohen, A., “Comparison of H-transfer between the wild type *E. coli* dihydrofolate reductase and its G121V mutant”, 24th Annual Midwest Enzyme Chemistry Conference, Chicago, IL, USA, Oct. 9, **2004**.
128. A.V. Chernyshev, A.K. Sra, M.W. Ribb, D.R. Dean, and A. Kohen, “KIE studies of the enzyme nitrogenase”, 24th Annual Midwest Enzyme Chemistry Conference, Chicago, IL, USA, Oct. 9, 2004.
129. N. Agrawal, B. Hong, C. Mihai, L. Wang, R.S. Sikorski, and A. Kohen, “Tunneling and dynamics studies with dihydrofolate reductase and thymidylate synthase”, Gordon Research Conference on Enzymes, Cofactors, and Metabolic Pathways, Kimball Union Academy, Meriden, NH, July 18-23, **2004**.
130. N. Agrawal, and A. Kohen, “Mechanistic studies of enzymes in aqueous buffers”, Gordon Research Conference on Green Chemistry, Roger Williams University, Bristol, RI, July 4-9, **2004**.
131. A.V. Chernyshev, A.K. Sra, M.W. Ribb, D.R. Dean, and A. Kohen, “Competitive ¹⁵N kinetic isotope effects of nitrogenase catalyzed dinitrogen reduction”, Gordon Research Conference on Nitrogen Fixation, Colby-Sawyer, New London, NH, June 20-25, **2004**.
132. N. Agrawal, B. Hong, C. Mihai, L. Wang, R.S. Sikorski, and A. Kohen (also oral presentation), “Environmentally coupled tunneling in enzymatic hydride transfer reactions”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences, Holiday Inn, Ventura, CA, Feb. 15-20, **2004**.

133. A.K. Sra, A.V. Chernyshev, M.W. Ribb, D.R. Dean, and A. Kohen, “ ^{15}N V/K kinetic isotope effects of N_2 reduction by nitrogenase”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences, Holiday Inn, Ventura, CA, Feb. 15-20, **2004**.
134. L. Wang, R.S. Sikorski, and A. Kohen, “ V/K kinetic isotope effects (KIE) with dihydrofolate reductase”, 23rd Annual Midwest Enzyme Chemistry Conference, Chicago, IL, Oct. 4, **2003**.
135. A.K. Sra, A.V. Chernyshev, M.W. Ribb, D.R. Dean, and A. Kohen, “Competitive ^{15}N kinetic isotope effects of nitrogenase catalyzed dinitrogen reduction”, 23rd Annual Midwest Enzyme Chemistry Conference, Chicago, IL, Oct. 4, **2003**.
136. N. Agrawal, B. Hong, C. Mihai, and A. Kohen, “Enzyme dynamics and quantum mechanical tunneling in w.t. *E.coli* thymidylate synthase”, 23rd Annual Midwest Enzyme Chemistry Conference, Chicago, IL, Oct. 4, **2003**.
137. K.A. Markham and A. Kohen, “Mechanistic studies of the hydride transfer step in bovine liver glutamate dehydrogenase”, 23rd Annual Midwest Enzyme Chemistry Conference, Chicago, IL, Oct. 4, **2003**.
138. N. Agrawal, C. Mihai, and A. Kohen, “Temperature dependence studies of kinetic isotope effects with w.t. *E. coli* thymidylate synthase”, International Isotope effects Conference, an EUCHEM conference, Uppsala, Sweden, June 22-27, **2003**.
139. R.S. Sikorski, K.A. Markham, L. Wang and A. Kohen, “ V/K kinetic isotope effects (KIE) with dihydrofolate reductase”, International Isotope effects Conference, an EUCHEM conference, Uppsala, Sweden, June 22-27, **2003**. (Oral presentation)
140. N. Agrawal and A. Kohen, “Exploring the mechanism of thymidylate synthase using kinetic isotope effects”, 18th Enzyme Mechanisms Conference, San Luis Resort, Galveston Island, TX, Jan. 4-7, **2003**.
141. K.A. Markham, R. S. Sikorski, L. Wang and A. Kohen, “Mechanistic studies using V/K KIEs for wt *E. coli* dihydrofolate reductase”, 18th Enzyme Mechanisms Conference, San Luis Resort, Galveston Island, TX, Jan. 4-7, **2003**.
142. N. Agrawal and A. Kohen, “Mechanistic studies of thymidylate synthase using kinetic isotope effects”, 11th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 22, **2002**.
143. K.A. Markham and A. Kohen, “Primary and Secondary H/T KIE Studies with wt *E. coli* Dihydrofolate Reductase”, 11th Biocatalysis and Bioprocessing Conference, Iowa City, IA, Oct. 22, **2002**.
144. N. Agrawal and A. Kohen, “Mechanistic Studies of Thymidylate Synthase using Kinetic Isotope Effects”, 22nd Midwest Enzyme Chemistry Conference, Chicago, IL, Sept. 28, **2002**.
145. K.A. Markham and A. Kohen, “Primary and secondary H/T KIE studies with wt *E. coli* dihydrofolate reductase”, 22nd Midwest Enzyme Chemistry Conference, Chicago, IL, Sept. 28, **2002**.
146. A.K. Sra, and A. Kohen (also oral presentation), “ ^{15}N studies of N_2 reduction by nitrogenase”, Gordon Research Conference on Nitrogen Fixation. Colby Sawyer College New London, NH, June 30-July 5, **2002**.
147. A. Kohen (also oral presentation), K.A. Markham, J.A. McCracken, and M.S. Moore, “Studying the chemical step in enzyme catalysis”, 223rd ACS National Meeting, Orlando, FL, Apr. 7-11, **2002**.

148. M.S. Moore and A. Kohen, “Synthesis of ^2H , ^3H , and ^{14}C labeled NADPH with low ^1H contamination”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Holiday Inn, Ventura, CA, Feb. 18-22, **2002**.
149. J.A. McCracken, K.A. Markham, and A. Kohen, “Determination of kinetic isotope effects on V/K with dihydrofolate reductase”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Holiday Inn, Ventura, CA, Feb. 18-22, **2002**.
150. K.A. Markham, J.A. McCracken, and A. Kohen, “Synthesis, purification and preservation of NADPH labeled with ^{14}C and ^3H ”, Gordon Research Conference on Isotopes in Biological and Chemical Sciences. Holiday Inn, Ventura, CA, Feb. 18-22, **2002**.
151. A.K. Sra, and A Kohen, “Nitrogenase catalyzed dinitrogen reduction – a new mechanistic approach”, 21st Midwest Enzyme Chemistry Conference, Chicago, IL, Oct. 13, **2001**.
152. J.A. McCracken, M.S. Moore, K.A. Markham, and A Kohen, “Synthesis and storage of isotopically labeled NADPH”, 21st Midwest Enzyme Chemistry Conference, Chicago, IL, Oct. 13, **2001**.
153. A.K. Sra, and A Kohen, “Nitrogenase catalyzed dinitrogen reduction – a new mechanistic approach”, 13th International Congress on Nitrogen Fixation, Hamilton, Ontario, Canada, July 2-7, **2001**.

Poster presentations of work performed prior to the appointment at Iowa:

1. A. Kohen, R. Cannio, S. Bartolucci, and J.P. Klinman, “What Role May Protein Dynamics Play in Enzyme Catalysis? Hydrogen Tunneling Probes a Mechanistic Phase-Transition with Thermophilic Dehydrogenase”, Gordon Research Conference on Enzymes, Coenzymes and Metabolic Pathways. Kimball Union Academy, Meriden, NH, July 12-17, **1998**.
2. A. Kohen, R. Cannio, S. Bartolucci, and J.P. Klinman, “Beyond The Classics: Hydrogen Tunneling in Enzyme Reaction”, The 16th Annual Meeting of the Biophysical Society. Kansas City, Missouri, Feb. 22-26, **1998**.
3. A. Kohen, R. Cannio, S. Bartolucci, and J.P. Klinman, “Kinetic Isotope Effect Studies of Thermophilic Dehydrogenase: Hydrogen Tunneling at High and Low Temperature”, Gordon Research Conference on Isotopes in Biology and Chemistry. Ventura, CA, Jan. 11-16, **1998**.
4. A. Kohen, R. Cannio, S. Bartolucci, and J.P. Klinman, “Thermophilic Dehydrogenase: Hydrogen Tunneling at High and Low Temperature”, Seventeenth International Conference of Biochemistry and Molecular Biology/1997 Annual Meeting of the American Society of Biology and Molecular Biology, San Francisco, CA, Aug. 24-29, **1997** [The *FASEB J.* 11, 1617 (1997)].
5. A. Kohen, R. Cannio, S. Bartolucci, and J.P. Klinman, “Isotope Effect Studies of a Thermophilic Enzyme”, 15th Enzyme Mechanisms Conference. Naples, FL, Jan. 4-8, **1997**.
6. A. Kohen, T. Jonsson and J.P. Klinman, “Glycoforms Modify Hydrogen Tunneling and Enthalpy of Activation: A Possible Probe for the Effect of Protein Dynamics on Catalysis”, 10th Symposium of the Protein Society. San Jose, CA, Aug. 3-7, **1996**.
7. A. Kohen, T. Jonsson and J.P. Klinman, “Glycosylation Modify Hydrogen Tunneling and Enthalpy of Activation: A Possible Probe for the Effect of Protein Dynamics on Enzyme Catalysis”, Gordon Research

- Conference on Enzymes, Coenzymes and Metabolic Pathways. Kimball Union Academy, Meriden, NH, July 14-19, **1996**.
8. A. Kohen, T. Jonsson and J.P. Klinman, "Correlation Between Glucose Oxidase Mass, Hydrogen Tunneling and Enthalpy of Activation: A Possible Probe for Protein Dynamics Effect on Catalysis", Gordon Research Conference on Isotopes in Biology and Chemistry. Ventura, California, Feb. 11-16, **1996**.
 9. T. Baasov, A. Kohen, S. Sheffer-Dee-Noor and S. Du, "Towards the Mechanism-Based Inhibitors of KDO8P Synthase - A Key Enzyme in the Biosynthesis of Lipopolysaccharides", The 61st Annual Meeting of the Israel Chemical Society. The Hebrew University, Jerusalem, Israel, Feb. 13-14, **1996**.
 10. A. Kohen (also oral presentation) and T. Baasov, "Insight into the Catalytic Mechanism of KDO8P Synthase - A Key Enzyme in the Biosynthesis of Lipopolysaccharides", The Annual Meeting of the Israel Biochemical Society. Bar Ilan University, Ramat-Gan, Israel, Mar. 21-22, **1994**.
 11. A. Kohen, R. Berkovitch and T. Baasov, "Stereochemistry of KDO8P Synthase Catalyzed Reaction", Fourth European Symposium on Organic Reactivity; 2nd Newcastle Meeting on Molecular Mechanisms in Bioorganic Processes. "Organic Reactivity: Physical and Biological Aspects", Newcastle Upon Tyne, U.K., July 11-16, **1993**.
 12. A. Kohen, R. Berkovitch, V. Belakhov and T. Baasov, "Stereochemistry of KDO8P Synthase Catalyzed Reaction", The 58th Annual Meeting of the Israel Chemical Society. Bar-Ilan University, Israel, Feb. 17-18, **1993**.
 13. A. Kohen and T. Baasov, "Steady State Kinetic Studies on 3-deoxy-D-manno-octulosonate-8-phosphate Synthase from *Escherichia coli*", The 57th Annual Meeting of the Israel Chemical Society. Technion - Israel Institute of Technology, Haifa, Israel, Feb. 12-13, **1992**.
 14. A. Jakob, A. Kohen and T. Baasov, "Mechanistic Studies on KDO8P Synthase. The Geometry of Substrate Binding and Product Release", The 57th Annual Meeting of the Israel Chemical Society. Technion - Israel Institute of Technology, Haifa, Israel, Feb. 12-13, **1992**.
 15. T. Baasov, A. Jakob and A. Kohen, "Mechanistic Studies on the Enzymes of Lipopolysaccharide Biosynthesis", The 56th Annual Meeting of the Israel Chemical Society. The Hebrew University, Jerusalem, Israel, Feb. 11-12, **1991**.
 16. E. Magal, J. C. Louis, A. Kohen and E. Yavin, "Brain Protein Kinase C in the Fetal Rat After Global Ischaemia", Second international symposium on pharmacology of cerebral ischaemia. University of Marburg, Marburg, Federal Republic of Germany, Oct. 3-5, **1988**.

TEACHING AT THE UNIVERSITY OF IOWA (cont. next page)

Semester/Year	ADVISEES		COURSES TAUGHT	
	Undrgrad	Graduate	Course No. and Title	Enrollment
Fall 1999	0	0	4:225: Special Topics in Organic Chemistry	7
Spring 2000	1	1	4:142: Organic Lab for Chemistry Majors 4:285: Seminar Organic Chemistry	35
Fall 2000	2	1	4:285: Seminar Organic Chemistry	13
Spring 2001	2	3	4:142: Organic Lab for Chemistry Majors	29
Fall 2001	1	3	4:211: Chemical Catalysis in Biology	13
Spring 2002	3	4	4:142: Organic Lab for Chemistry Majors	32
Fall 2002	4	5	4:211: Chemical Catalysis in Biology	5
Spring 2003	3	6	4:142: Organic Lab for Chemistry Majors	29
Fall 2003	2	7	Flexible load	
Spring 2004	2	8	4:008: General Chemistry II	76
Fall 2004	2	8	4:225: Special Topics in Organic in Chemistry 4:121: Organic Chemistry I ^a 4:285: Seminar Organic Chemistry	13 358 12
Spring 2005	2	8	4:008: General Chemistry II	73
Fall 2005	2	8	4:121: Organic Chemistry I ^a 052:223: Introduction to Biocatalysis ^b	375 24
Spring 2006	4	9	4:008: General Chemistry II	75
Fall 2006	3	9	Career Development Award	
Spring 2007	2	8	4:121: Organic Chemistry I 142:280 Topics in MCB ^b	302 17
Fall 2007	2	8	4:121: Organic Chemistry I ^a 052:223: Introduction to Biocatalysis ^b 4:285: Seminar Organic Chemistry	274 15 18
Spring 2008	2	9	Scholars Award	
Fall 2008	2	9	4:121: Organic Chemistry I ^a	390
Spring 2009	2	9	Scholars Award 128001 (Technion, Israel): Biological Catalysis	35
Fall 2009	3	7	4:121: Organic Chemistry I 4:029: First Year Seminar 052:223: Introduction to Biocatalysis ^c	382 15 13
Spring 2010	3	9	Scholars Award	
Fall 2010	3	9	4:121: Organic Chemistry I ^a 4:029: First Year Seminar	394 13
Spring 2011	2	10	4:142: Organic Lab for Majors	47

Fall 2011	2	10	4:029: First Year Seminar	15
			052:223: Introduction to Biocatalysis ^c	26
			4:191	32
			4:192	30

a. One of two teachers. b. One of five teachers. c. One of four teachers.

Students and Postdoctoral Scholars Trained or in Training

Name	Years	Outcome
<u>Postdoctoral Associates</u>		
Amandeep Sra	July 2000-Nov 2003	Research Scientist, UT Dallas, TX
Steve Sikorski	Aug 2002-Dec 2003	Director of Product Development, Garden of Life, FL
Cornelia Mihai	July 2002-August 2004	Associate Professor, NW Oklahoma State University
Omar Bouh	Jan 2003	
Kelli Markham	Jan 2005-June 2006	Director of EHS, Office of Science, DOE
Anatoly Chernyshev	Aug 2003-May 2008	Assist. Professor, University of Nizwa, Oman
Laura Perissinotti	April 2010 – March 2011	
Muhammad Saeed	Nov 2009 – present	
Kevin Francis	May 2011 - present	
<u>Graduate Students</u>		
Kelli Markham	Jan 2000 – Dec. 2004	Ph.D., Dec 04. Director of EHS, DOE.
Malia Moore	Jan 2001 – July 2002	M.S. May 2002. U of Kansas Medical School
Jocelyn McCracken	Jan 2001 – July 2002	M.S. May 2002. MBA program
Nitish Agrawal	Jan 2002 – July 2005	Ph.D., Aug 2005 (Postdoc - Scripps)
Lin Wang	June 2002 – Dec. 2006	Ph.D., Dec 2006 (Postdoc - Penn. State)
Baoyu Hong	June 2003 – Sept. 2007	Ph.D., Jan. 2011 (Scientist, ADDS Pharmaceuticals at Sunnyvale, CA)
Jigar Bandaria	Jan 2004 – May 2009	Ph.D., July 2009 (Postdoc - UC Berkeley)
Todd Fleischmann	Jan 2004 – Aug 2009	M.S. Aug 2009 (Rockwell Labs Ltd., MI)
Atsushi Yahashiri	Jan 2005 – June 2010	Ph.D., July 2010 (Postdoc - UI)
Arundeti Sen	Jan 2006 – Present	Postcomp.
Vanja Stojkovic	Dec 2006 – Present	Postcomp.
Zhan Wang	Jan 2007 – Present	Postcomp.
Daniel Roston	Aug. 2007 – Present	Postcomp.
Eric Koehn	Jan. 2008 – Present	Postcomp.
Tatiana Mishanina	Jan 2009 – Present	Postcomp.
D. Thelma Abeysinghe	Jan 2010 – Present	Postcomp.
Qi (Gail) Guo	Jan 2010 – Present	Postcomp.

Priyanka N. Singh	Jan 2010 – Present	Postcomp.
Thushani Nilaweera	Jan 2011 – Present	
Philip Pagano	Jan 2011 - Present	

Undergraduates and Honors Students

Jeff Smith	Jan 2000-Dec 2000	[Honors; U of IA, Chemistry 4:192] <u>Thesis title:</u> “HPLC Separations of DHFR Substrates and Nucleotides”.
Darren Berger	Jan 2001-May 2001	[U of IA, Chemistry]
Suzan Klaus	Jan 2001-May 2001	[U of IA, Chemistry]
Mike Klotz	Aug 2001-Dec 2001	[U of IA, Chemistry]
Lena Rydberg	May 2002-Aug 2002	[U of IA, Biochemistry]
Carla Asbury	Feb 2002-July 2003	[U of IA, Chemistry]
Elizabeth Vanderah	May 2004-Aug 2004	[Iowa State U, Biochemistry]
Jennifer Dibbern	May 2004-Aug 2004	[MIT, Chemistry]
Scott Tharp	May 2003-May 2005	[Honors; U of IA, Biochemistry 99:155] <u>Thesis title:</u> “A New Probe for Primary and Secondary Hydrogen Coupling in the Dihydrofolate Reductase Catalyzed Reaction”.
Majd Haddad	May 2005-May 2006	[Honors; U of IA, Biochemistry 99:155] <u>Thesis title:</u> “The Study of Flavin Dependent Thymidylate Synthase”.
Pierre Charly Point Du Jour	May 2005-Aug 2005	[SROP summer student form Florida Memorial U., FL, Biochemistry]
Wilmarie Santana	May 2005-Aug 2005	[SROP summer student form U. Puerto Rico-Bayamon, Biochemistry]
Eric Koehn	May 2006-Dec. 2007	[Honors; U of IA, Chemistry 4:192] <u>Thesis title:</u> “Unraveling the Catalytic Mechanism of <i>thyX</i> - encoded Flavin Dependent Thymidylate Synthase”.
Hyunok (Cindy) Jo	Aug 2006 – May 2008	[Honors; U of IA, Chemistry 4:192] <u>Thesis title:</u> “Analyzing the Variables Affecting Sensitivity of Primary Kinetic Isotope Effects in Dihydrofolate Reductase (DHFR).
Hyun Jo	May 2008 – May 2009	[U of IA, Chemistry]
Michael Schultz	Aug. 2008 – Aug 2009	[U of IA, Chemistry]
Daniel Willmer	May 2009 – Aug 2009	[Coe College, IA, Chemistry]
Esther Jean-Glles	May 2009 – Aug 2009	[SROP/McNair summer student form Brooklyn College, NY, Chemistry and Biochemistry]
Michael Toraason	May 2009 – Dec. 2010	[U of IA, Chemistry]
Asad Hashmi	May 2009 – May 2010	[U of IA, Chemistry]
Celvin Luzum	May 2009 – May 2010	[U of IA, Chemistry]
Erika Torres	May 2010 – July 2010	[SROP/McNair summer student form U of Porto Rico, Chemistry]
Angela Torres	May 2010 – July 2010	[SROP/McNair summer student form U of Porto Rico, Chemistry]

Jordan Koehn	May 2010 – Aug. 2010	[U of Minnesota, Biochemistry]
Laura Tvedte	May 2010 – July 2010	[Truman State U, MO]
Emily Batkie	Aug. 2010 – May 2011	[U of IA, Chemistry]
Pablo Marrero	June 2011 – July 2011	[SROP/McNair summer student from U of Porto Rico, Chemistry]
Eva Serem	June 2011 – July 2011	[SROP/McNair summer student from Minnesota State University at Mankato]
Salah Moghram	June 2011 – present	[U of IA, Biochemistry]
John Corcoran	Aug. 2011 – Present	[U of IA, Chemistry]

SERVICE

Service at the University of Iowa

Departmental service

- * Departmental Library Committee (1999-2004)
- * ACS Student Affiliate Committee (1999-2002)
- * Temporary Advisor of new “Organic” Graduate Students (2000-2005 and 2007-2009)
- * Student Travel Award Committee (2005)
- * Faculty Search Committees (Organic 2005 and Physical 2007)
- * Review committee for Lecturers (Spring 2004 and 2007)
- * Participated in New Faculty Search and Selection process (2000-2009)
- * Participated in Graduate Student Recruiting (2000-2009)
- * Participated in Working Weekends at Iowa (2000-2008)
- * Search committee for Lecturers (2006)
- * Delivered recruiting seminars at local colleges (about once a year 2000-2009)
- * Pre-tenured faculty review committees (Chair, 2006 and 2007)
- * Co-director of Graduate Studies (2006-2009)
- * Undergraduate Advisor for Chemistry Majors (2005 – 2010)
- * Director of Graduate Studies (2010 – present)
- * Chair of Graduate Curriculum Committee (2010 - Present)
- * Executive Committee (2010 - Present).
- * Post tenure review committee for Quinn (Chair, w/ Small, 2011)
- * Hosted departmental colloquium speakers (ca. once a year 1999-2012)
- * Salary Committee 2012
- * Mishtu Dey’s Review Committee (Chair, w/ Quinn, 2012)

CLAS service

- * CLAS Faculty Assembly, (2006 – 2009).
- * CLAS Faculty Assembly Nomination Committee (2008).
- * Serving as reviewer on the external review for the Linguistics Department (Fall 2011)

CGS service

- * Postdoctoral Scholars Advisory Committee, PSAC (2007-2008).
- * Presidential Graduate Fellows program reevaluation committee (2011).
- * James F. Jakobsen Graduate Conference, University of Iowa, Iowa City, IA; faculty judge of student papers (2012).

Interdisciplinary and University service

- * Executive Committee of the Center for Biocatalysis and Bioprocessing (2002-present)
- * Biosciences Advisory Committee (2003-2008)
- * Admission Committee of the UI Biosciences Program (2000-2006)
- * Served on Comprehensive Exams and Thesis Committees in Chemistry (~50), Chem. Biochem. Eng. (2), and Biochemistry (3).
- * Round-table facilitator, CIC Summer Research Opportunities Programs (SROP) Conference of the UI Graduate College (2004)
- * MPSFP VPR Funding Review Committee (2006, 2011)
- * Biosciences Program Advisor (2005, 2006, 2008, 2009, 2010, 2011)
- * MSTP Faculty Member (2005- present)
- * EHS: Basic science radiation protection committee (2009 – present)
- * Honors Faculty at the Iowa Honors Program (2009 - present)
- * Presentation of research in the SROP summer program (2011)
- * Presidential Graduate Fellows program evaluation committee – College of Graduate Studies (2011)
- * Mentorship committee for Prof. Michael Schultz (a compulsory committee in Radiology and in Free Radical Radiation Biology Program – 2011 - present)

External Service -- National and InternationalConference Organization and Guest Editor

- **Chair**, Gordon Research Conference on Isotopes in chemistry and Biology, Galveston, TX, Feb. 2-7, **2014**.
- **Executive Committee of ISOTOPES 2013**, Lodz, Poland, **2013**.
- **Vice Chair**, Gordon Research Conference on Isotopes in chemistry and Biology, Galveston, TX, Feb. 5-10, **2012**.
- **Scientific Committee, ISOTOPES 2011**, Gréoux-les-Bains, France, June 20-24, **2011**.
- **Organizing Committee, ISOTOPES 2009**, Cluj-Napoca, Romania May 25-29, **2009**.
- **ACS Symposium Co-Organizer** with Prof. Arieh Warshel at the ACS National Meeting (Division of Physical Chemistry), Symposium title: Functional Motions in Enzyme Catalysis. Salt Lake City, Utah, March 22-27, **2009**.
- **Guest Editor** *Proc. Natl. Acad. Sci. USA* (2008).
- **Organizing Committee**, 17th Annual Center for Biocatalysis and Bioprocessing Conference, Oct. 20-21, **2008** Iowa City, IA.
- **Chair** “XXVIII Midwest Enzyme Chemistry Conference”, University of Chicago, IL, Oct. 5, **2008**.
- **Organizing Committee** “QAMTS 2007”, Huston, TX, Oct. 28-Nov. 1, **2007**.
- **Executive Committee** “Isotopes 2007”, Castellon, Spain, May 27-June 1, **2007**.
- **Discussion Leader** at the Gordon Research Conference on Isotope in Chemistry and Biology, Ventura, CA. Feb. 17-22, **2006**.
- **Program Committee** of the International Conference on Quantum Atomic and Molecular Tunneling in Solids (QAMTS), Santiago de Compostela, Spain, July 19-21, **2005**.
- **Discussion Leader** at the Gordon Research Conference on Enzymes, Cofactors, and Metabolic Pathways, Kimball Union Academy, Meriden, NH. July 18-23, **2004**.
- **ACS Symposium Organizer** with Prof. Arieh Warshel at the ACS National Meeting (Division of Physical Chemistry), Symposium title: Structure Function Correlation of Biomolecules: Enzyme Action. Orlando FL. April 7-11, **2002**.

- **Session Organizer and Chair** at the Gordon Research Conference on Isotope Effect in Chemistry and Biology, Session title: Tunneling in Enzyme Catalysis, Feb. 17-24, **2002**, Ventura, CA.
- **Organizing Committee** of the 10th Annual Center for Biocatalysis and Bioprocessing Conference, Oct. 22-24, **2001** Iowa City, IA.

External Examiner and Evaluator

- **External Examiner** on a thesis committee – Knox College, May 26, **2004** (B.Sc. Honors)
- **External Examiner** on a thesis committee – Albert Einstein college of Medicine, Sep. 14, **2004** (Ph.D.).
- **Review of a Promotion and Tenure Package for the School of Natural Sciences, UC Merced (2010).**
- **External Examiner** on a thesis committee – Albert Einstein college of Medicine, Sep. 14, **2012** (Ph.D.).

Outreach activities

- **iExploreSTEM** STEM in Iowa expo (2011).
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Review for Professional Journals and Granting Agencies

Manuscript Review for Professional Journals and Other Publications:

- | | |
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| • <i>J. Am Chem. Soc.</i> (52) | • <i>J. Theor. Biol.</i> (2) |
| • <i>Biochemistry</i> (34) | • Book chapters (4) |
| • <i>J. Phys. Chem.</i> (17) | • <i>J. Phys. Chem.</i> (2) |
| • <i>Proc. Natl. Acad. Sci. USA</i> (12) | • <i>Molecular Microbiol.</i> (1) |
| • Nature (6) | • <i>J. Inorg. Biochem.</i> (1) |
| • <i>Science</i> (5) | • <i>J. Bacteriol.</i> (3) |
| • <i>Chem. Rev.</i> (3) | • <i>Biophys. J.</i> (1) |
| • <i>Nature Chemical Biology</i> (1) | • <i>J. Org. Chem.</i> (1) |
| • <i>Nature Chemistry</i> (1) | • <i>Z.f. Phys. Chemie</i> (1) |
| • <i>Protein Science</i> (1) | • <i>Environmental Sci. Technol.</i> (1) |
| • <i>J. Phys. Org. Chem.</i> (3) | • <i>ACS Chem. Biol.</i> (1) |
| • <i>J. Proteome Res.</i> (1) | • <i>ChemPhysChem</i> (1) |
| • <i>J. Biol. Inorg. Chem.</i> (1) | • <i>Israel J. Chem.</i> (1) |
| • <i>Mol. Pharmaceutics</i> (1) | • <i>FEBS J.</i> (2) (1 in 2011) |
| • <i>Bioorg. Chem.</i> (1) | • <i>Wiley-Blackwell Publishers</i> (2) |
| • <i>Chem. Comm.</i> (2) | • <i>Rapid Commun. Mass Spect.</i> (1) |
| • <i>Biochem. Biophys. Acta</i> (3) | • <i>Phys. Chem. Chem. Phys.</i> (1) |
| • <i>Archives of Biochem. Biophys.</i> (3) | • <i>J. Agric. Food Chem.</i> (1) |
| • <i>Anal. Biochem.</i> (5) | • <i>FEMS Microbiol. Lett.</i> (1) |
| • <i>Biotechnology Progress</i> (1) | • <i>PLoS ONE</i> (1) |
| • <i>Phil. Trans. R. Soc. B</i> (2) | |

Grant Review Panels:

- NIH study session, Ad Hoc Panelist, MSFE Feb. **2008**.
- NSF panel, CHE-MCB joint session Nov. **2008**.
- Royal Society of Chemistry, UK, Chair of Scientific Advisory Group for LOLA grant, Feb. **2009**.
- NIH Special Emphasis Panel ZRG1, March **2009**.

- NIH RC1, Challenge Grants, ZRG1 BCMB P 58 R, July **2009**.
- NIH study session, Ad Hoc Panelist, MSFE Oct. **2009**.
- NIH MSFE study session: Permanent member and Co-Chair **2010-2012**.
- NIH Special Emphasis Panel 'Special Topics in Biophysics' Study Section, Dec 19, **2011**.
- NIH MSFE study session: Permanent member and Chair **2013-2014**.

Mail Reviewer for Funding Agencies:

- NSF (32)
- USDA (3)
- ACS-PRF (9)
- U.S. Civilian Research and Development Foundation (1)
- BBSRC/BMS UK (1)
- BSF (USA-Israel) (3)
- ICTS (8)

Outreach Activities

- Iowa State Fair, Aug. 13, 2009.
- Teaching two science classes in Roosevelt Elementary School (2009, 2010).
- Judge at The Eastern Iowa Science & Engineering Fair (EISEF <http://www.eisef.org>), March 17, 2011.
- Teaching six science classes in Northwest Junior High per spring (2010, 2011).