Name **David N.M. Jones**

Present Position **Associate Professor,**

Address Department of Pharmacology,
University of Colorado Denver, School of Medicine
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A. Education

1983-1986 University of Bristol, U.K. B.Sc. Chemistry,
1986-1989 University of Cambridge, U.K. Ph.D. Chemistry. Dr. Jeremy Sanders
1989-1992 Postdoctoral Research, University of Cambridge. Prof. Alan Fersht
1992-1995 Postdoctoral Fellowship MRC, Laboratory of Molecular Biology, Cambridge, UK. , Dr. David Neuhaus

B. Positions and Employment.

1995-1997 Research Associate Assistant Professor, Department of Biochemistry, University of Chicago, Chicago, IL.
1995-1997 Assistant Manager of Biological Sciences NMR Facility, University of Chicago.
1997- Present Assistant/Associate Professor, Department of Pharmacology, University of Colorado Health Sciences Center. Denver CO.
1997-Present Director and Manager of Biomolecular NMR Facility, University of Colorado Health Sciences Center, Denver CO.
1997-Present Program Member, University of Colorado Cancer Center,
Biomedical Sciences Program,
Program in Biomolecular Structure.
2003-Present Member of Molecular Biology Program, UCHSC
2003-Present Co-director of Rocky Mountain Regional High Field NMR Facility
2005-Present Member, Medical Scientist Training Program, UCDHSC

C. Peer-Reviewed Publications.

1. Published Manuscripts

Cavanagh, J., Hunter, C.A., **Jones, D.N.M**., Keeler, J., and Sanders, J.K.M., Practicalities and Applications of Reverse Heteronuclear Shift Correlation - Porphyrin and Polysaccharide Examples. *Magnetic Resonance in Chemistry*, (1988) 26, p. 867-875.

Fowles, A.M., Beale, M.H., **Jones, D.N.M**., Macmillan, J., and Willis, C.L., 2-Alpha-Alkyl Gibberellin-A1 and Gibberellin-A4. *Journal of the Chemical Society-Perkin Transactions* 1, (1988) 1983-1991.

Jones, D.N.M. and Sanders, J.K.M., Assignment of the C-13 Nmr-Spectrum of the Klebsiella K3 Serotype Polysaccharide by Cosy Spectroscopy. *Journal of the Chemical Society-Chemical Communications,* (1989) 167-169.

Jones, D.N.M. and Sanders, J.K.M., Biosynthetic-Studies Using C-13 COSY - the Klebsiella K3-Serotype Polysaccharide. *Journal of the American Chemical Society*, (1989) 111, p. 5132-5137.

Jones, D.N.M. and Sanders, J.K.M., A reverse approach to 1H-N.M.R. assignments of bacterial polysaccharides. *Carbohydr Res,* (1990) 208, p. 15-21.

Jones, D.N.M., Bycroft, M., Lubienski, M.J., and Fersht, A.R., Identification of the barstar binding site of barnase by NMR spectroscopy and hydrogen-deuterium exchange. *FEBS Lett,* (1993) 331, p. 165-72.

Lubienski, M.J., Bycroft, M., **Jones, D.N.M**., and Fersht, A.R., Assignment of the backbone 1H and 15N NMR resonances and secondary structure characterization of barstar. *FEBS Lett,* (1993) 332, p. 81-7.

Jones, D.N.M., Searles, M.A., Shaw, G.L., Churchill, M.E.A., Ner, S.S., Keeler, J., Travers, A.A., and Neuhaus, D., The solution structure and dynamics of the DNA-binding domain of HMG-D from Drosophila melanogaster. *Structure*, (1994) 2, p. 609-27.

Churchill, M.E.A., **Jones, D.N.M**., Glaser, T., Hefner, H., Searles, M.A., and Travers, A.A., HMG-D is an architecture-specific protein that preferentially binds to DNA containing the dinucleotide TG. *EMBO J,* (1995) 14, p. 1264-75.

Fletcher, C.M., **Jones, D.N.M**., Diamond, R., and Neuhaus, D., Treatment of NOE constraints involving equivalent or nonstereoassigned protons in calculations of biomacromolecular structures. *Journal of Biomolecular NMR*, (1996) 8, p. 292-310.

Benzinger, T.L., Braddock, D.T., Dominguez, S.R., Burkoth, T.S., Miller-Auer, H., Subramanian, R.M., Fless, G.M., **Jones, D.N.M**., Lynn, D.G., and Meredith, S.C., Structure-function relationships in side chain lactam cross-linked peptide models of a conserved N-terminal domain of apolipoprotein E. *Biochemistry*, (1998) 37, p. 13222-9.

Burkoth, T.S., Benzinger, T.L.S., **Jones, D.N.M**., Hallenga, K., Meredith, S.C., and Lynn, D.G., C-terminal PEG blocks the irreversible step in beta-amyloid(10-35) fibrillogenesis. *Journal of the American Chemical Society*, (1998) 120, p. 7655-7656.

Wang, B., **Jones, D.N.M**., Kaine, B.P., and Weiss, M.A., High-resolution structure of an archaeal zinc ribbon defines a general architectural motif in eukaryotic RNA polymerases. *Structure*, (1998) 6, p. 555-69.

Jones, D.N.M. and Bendiak, B., Novel multi-dimensional heteronuclear NMR techniques for the study of 13C-O-acetylated oligosaccharides: expanding the dimensions for carbohydrate structures. *J Biomol NMR*, (1999) 15, p. 157-68.

Dow, L.K., **Jones, D.N.M**., Wolfe, S.A., Verdine, G.L., and Churchill, M.E.A., Structural studies of the high mobility group globular domain and basic tail of HMG-D bound to disulfide cross-linked DNA. *Biochemistry*, (2000) 39, p. 9725-36.

Bendiak, B., Fang, T.T., and **Jones, D.N.M**., An effective strategy for structural elucidation of oligosaccharides through NMR spectroscopy combined with peracetylation using doubly C-13-labeled acetyl groups. *Canadian Journal of Chemistry*, (2002) 80, p. 1032-1050.

Hankin, J.A., **Jones, D.N.M**., and Murphy, R.C., Covalent binding of leukotriene A4 to DNA and RNA. *Chem Res Toxicol,* (2003) 16, p. 551-61.

Kruse, S.W., Zhao, R., Smith, D.P., and **Jones, D.N.M**., Structure of a specific alcohol-binding site defined by the odorant binding protein LUSH from Drosophila melanogaster. *Nat Struct Biol,* (2003) 10, p. 694-700.

Rao, K.S., Albro, M., Zirrolli, J.A., Vander Velde, D., **Jones, D.N.M**., and Frerman, F.E., Protonation of crotonyl-CoA dienolate by human glutaryl-CoA dehydrogenase occurs by solvent-derived protons. *Biochemistry*, (2005) 44, p. 13932-40.

Xu, P., Atkinson, R.**, Jones, D.N.M**., and Smith, D.P., Drosophila OBP LUSH is required for activity of pheromone-sensitive neurons. *Neuron*, (2005) 45, p. 193-200.

Bucci, B.K., Kruse, S.W., Thode, A.B., Alvarado, S.M., and **Jones, D.N.M**., Effect of n-alcohols on the structure and stability of the Drosophila odorant binding protein LUSH. *Biochemistry*, (2006) 45, p. 1693-701.

Li, B., Phillips, N.B., Jancso-Radek, A., Ittah, V., Singh, R., **Jones, D.N.M**., Haas, E., and Weiss, M.A., SRY-directed DNA bending and human sex reversal: reassessment of a clinical mutation uncovers a global coupling between the HMG box and its tail. *J Mol Biol*, (2006) 360, p. 310-28.

Thode, A.B., Kruse, S.W., Nix, J.C., and **Jones, D.N.M**., The Role of Multiple Hydrogen-Bonding Groups in Specific Alcohol Binding Sites in Proteins: Insights from Structural Studies of LUSH. *J Mol Biol,* (2008) 376, p. 1360-1376

Laughlin, J.D., Ha T-S, **Jones, D.N.M.** and Smith, D.P. Activation of Pheromone-Sensitive Neurons is Mediated by Conformational Activation of a Pheromone-Binding Protein, *Cell* (2008). 133, p.1255-1265.

D. Research and Training Support

Active

1R01 AA013618 (Jones) 2/1/03-1/31/09 (NCE)
NIH/NIAAA
The molecular basis of alcohol's actions.
Role: Principal Investigator

1R01 DC008834 (Jones) 4/1/2007 - 3/31/2012
NIH/NIDCD
Molecular basis of olfactory perception in Anopheles gambiae
Role: Principal Investigator

2 R56 AA013148-07A1 (PI Yoshimura) 12/1/08-11/30/2013 1.2 cal mo
NIH/NIAAA $50,000 (Subcontract)
Action of Ethanol on Cyclic AMP Signal Transduction
Role: Co-Investigator

5P41GM068928-04 NIH/GM (Wuttke) 6/1/03-7/1/04
NIH/GM
Purchase of a 900 MHz NMR Spectrometer
Role: Key Personnel

R03-AI080805 (Davis) 4/1/09-3/31/11
NIH/NIAID
Structural Analysis of Helminth mRNA Cap-Binding Proteins
Role: Co-Investigator

Completed

1RO1-CA-82181-04 (Jones) 7/1/2001-6/31/2006
NIH/NCI
NMR Structure and dynamics of membrane binding proteins

AHA 0510005Z (Bucci) 01/01/05–12/31/06
American Heart Association
Structural Studies of Alcohol binding proteins
Predoctoral Fellowship for Brigid Bucci

5U01AA013517-05 INIA West Consortium(PI Koob) 9/1/05/-8/31/06
NIH/NIAAA Pilot Project (PI Jones)
Effects of alcohol on PKC structure and dynamics.

1 S10 RR19125-01 (Jones) 4/1/04-3/31/05
NIH/NCRR
Purchase of a cryoprobe for NMR structural Studies

2R01 GM40367-14 (Martin) 7/1/02-6/30/06
NIH/GM
Genetics and Biochemistry of a Murine Retrotransposon

1R01 AA013618-01A1 (Jones) 6/10/04-7/31/05
NIH/NIAAA
Minority research training supplement for Sylvia Alvarado

AHA 0310065Z (Jones) 01/03 – 12/04
American Heart Association
Molecular Recognition of Alcohol: Structural and Functional Studies of LUSH
Predoctoral Fellowship for Schoen Kruse

ABMRF (Jones) 01/01/00-12/32/2001
Alcoholic Beverage Medical Research Foundatio
The molecular basis of alcohol specificity in the Drosophila protein LUSH

1R01 GM40367-13 (Martin) 7/1/01-6/31/02
NIH/GM Structural Supplement
LINE-1 Proteins involved in Retrotransposition

AHA 0130234N (Jones) 01/01/01-13/31/2003
American Heart Association
Molecular basis for alcohol toxicity: the nature of alcohol binding sites *in proteins*

AA03527-23 5 P50 (Dietrich) 12/1/99-11/30/2001
NIH/NIAAA
NIH Neuroscience Program Pilot Project (Jones)
Structural Basis of Alcohol Binding by the Drosophila Protein LUSH

E. Service

1. Department Administration

2002-Present	Dept of Pharmacology Curriculum Committee
2003-2008	Member of UCHSC Faculty Senate

2. School Administration

1997-Present	Director and Manager of UCHSC NMR facility
2002-2008	Program in Biomolecular Structure Curriculum Committee
2002-Present	Program in Biomolecular Structure Admissions Committee
2003-Present	Biomedical Sciences Program Admissions Committee
2003	Department of Biochemistry Faculty Search Committee
2004	Department of Pharmacology/Biochemistry Faculty Search Committee
2005	Graduate School Preliminary Exam Committee
2005-Present	Member of the Strategic Initiatives on Research Committee (SIRC)
2005-Present	Associate Director of the Rocky Mountain Regional 900 MHz NMR Facility

2006-Present	MSTP Admissions Committee Member
2007-2008	Chair, Strategic Initiatives on Research Committee (SIRC)
2009	Chair, MSTP Admission Committee

F. External Activities

1. Invited Lectures and Presentations

Internaltional Symposium on Olfaction and Taste, San Francisco, CA (July 2008)
ELUCIDATING THE MOLECULAR MECHANISM OF 11-CIS-VACCENYL ACETATE RECOGNITION IN DROSOPHILA.

Keystone Symposium, Chemical Senses, Snowbird Utah (January 2007)
Structural Basis of Pheromone Recognition in *Drosophila*

Dept of Anesthesiology, University of Pennsylvania, Phiadelphia PA (February 2004)
Insights into the nature of specific alcohol binding sites.

Molecular and Cellular Biology Program, University of Connecticut, Storrs, CT (August 2003)
Why Drosophila don't drink single malt: Insight into alcohol binding sites in proteins.

Alcohol Research Center, UCHSC (March 2003)
Why is Drosophila attracted to alcohol? Insight from structural studies of LUSH

Department of Chemistry and Biochemistry, Denver University, Denver CO (October 2002)
Molecular recognition of alcohol. Insights from the Drosophila protein LUSH

International Conference on Biomedical Spectroscopy, Cardiff, UK. (July 2002)
Structural elucidation of natural product oligosaccharides: Improved resolution by use of NMR spectroscopy and peracetylation with ^{13}C labeled acetyl groups.

Program in Pharmaceutical Sciences, UCHSC, Denver CO. (May 2002)
Molecular recognition of alcohol. Insights from the Drosophila protein LUSH

Department of Pharmacology, UCHSC (April 1997)
Structural Insights into HMG-domain proteins

Department of Clinical Oncology, University of Chicago (July 1994)
The structure and dynamics of HMG-D from Drosophila melanogaster

Department of Biochemistry, University of Dundee, U.K. (December, 1991)
"Identification of the barstar binding site of barnase by NMR spectroscopy and hydrogen-deuterium exchange"

Royal Society of Chemistry Symposium on Carbohydrates, Bedford UK (June 1989)
"Biosynthetic Studies of Bacterial Polysaccharides using ^{13}C-COSY".

International Symposium on Mucus and Related Topics, Manchester , U.K. (July 1988)
"NMR Spectroscopy Studies of Microbial Polysaccharides"

2. Poster Presentations

The role of multiple hydrogen bonding groups in specific alcohol binding sites in proteins:
Jones DNM, Thode AB, Kruse SW, and Nix, JC. Research Society on Alcoholism, Washington DC. June 2008

Laughlin, J.D., Ha, T-S, Smith, D.P and Jones, D.N.M., "Structural Basis of Pheromone Recognition in *Drosophila*" Keystone Symposium, Chemical Senses, Snowbird Utah (January 2007)

Dong, E., Xu, P-X, Smith, D.P, Zweibel, L.J. and Jones, D.N.M. "Interactions of human odors with odorant binding proteins from *Anopheles gambiae* mosquitoes", Keystone Symposium, Chemical Senses, Snowbird Utah January 2007)

Thode, A.B, Bucci, B.K., Kruse, S.W. and Jones, D.N.M. "Probing the role of specific residues in specific alcohol binding sites in proteins", Keystone Symposium, Frontiers in Structural Biology, January 2006.

Bucci, B.K., Kruse, S.W., Smith, D.P., and Jones, D.N.M., " Conformational Changes in the Alcohol Binding Protein LUSH, "Insights into the Mechanisms of Alcohol Induced Changes in Proteins and Odorant Receptor Activation", 45th Experimental NMR Conference, Pacific Grove, CA (April 2004)

Kruse, S.W., Zhao, R., Smith, D.P., and **Jones, D.N.M.,** "Defining an alcohol-binding motif in proteins: Insights from structural and computational studies of the Drosophila protein LUSH", 26th Annual Meeting Research Society on Alcoholism. Ft. Lauderdale, FL, (June 2003).

Kruse, S.W., Zhao, R., Smith, D.P., and **Jones, D.N.M.**, "Molecular recognition of alcohol: insight from structural and computational studies of the Drosophila protein LUSH," Keystone Symposium: Frontiers of NMR in Molecular Biology, Taos, NM (February 2003).

Bendiak, B and **Jones D.N.M**, New heteronuclear multidimensional NMR techniques for Structural Elucidation of Oligosaccharides, 40th Experimental NMR Conference, Orlando, FL (March 1999).

Hallenga, K. and **Jones, D.N.M**. "The general use of shaped pulses in Triple resonance experiments- An adiabatic revolution." 38th Experimental NMR Conference, Orlando FL, (March 1997).

Jones, D. N. M., Searles, M. A., Shaw, G. L., Churchill, M. E. A., Keeler, J., Travers, A. A. and Neuhaus, D, "Solution structure, Backbone dynamics and DNA binding of HMG-D". XVII International Conference on Magnetic Resonance in Biological Systems, Veldhoven, Netherlands, (August 1994).

Jones, D. N. M., Searles, M. A., Churchill, M. E. A., Travers, A. A. and Neuhaus, D., "The solution structure of the high mobility group protein HMG-D from *Drosophila melanogaster*." Royal Society of Chemistry Tenth International Meeting on NMR Spectroscopy, University of Swansea (July 1993).

Jones, D. N. M. and Sanders, J. K. M., "NMR Spectroscopy of Bacterial Polysaccharides under Physiological Conditions" Royal Society of Chemistry, Ninth International Meeting on NMR Spectroscopy, University of Warwick (July 1989).

3. Participation in grant review panels

1999	American Heart Association, Ad Hoc reviewer
2003	NIH National Heart Lung and Blood Institute
2005	National Science Foundation,
2005	NIH Biology of Development and Aging IRG
2007-2008	NIH National Center For Research Resources

4. Journal Reviews and Editorial Activities

2007-Present	Biophysics
2007-Present	Biophysical Journal
2005-Present	Journal of Biological Chemistry
2004-Present	Biochemistry -
2004	Protein Science –

2009 J. Insect Physiology

G. Training Record of Students and Fellows

1. Thesis Supervision: Role as Thesis Director

Former Students

Student Name	Dates	Program	Title of Research
Schoen Kruse	1998-2004	Pharmacology	Structure of the alcohol binding protein LUSH
Emily Peterson	2002-2005	Denver University Honors Thesis	Biophysical characterization of an alcohol binding protein
Sylvia Alvarado	2003-2005	CU Denver	Structural analysis of protein alcohol interactions
Anna Thode	2003-2007	Biomol. Struct	The role of hydrogen-bonds in protein alcohol
John Laughlin	2004-2008	Pharmacology	The molecular basis of pheromone recognition in insects interactions
Brigid Bucci	2003-2009	Biomol. Struct.	Structural Studies of alcohol binding proteins

Current Students

Student	Dates	Program	Title of Research
Brian Ziemba	2005-present	Pharmacology	Interactions of alcohol and Protein Kinase C
Alice Castile	2008 Present	Molecular Biology	Oodor detection in Malaria mosquitoes
Jamie Collier	2008-Present	Biomolecular Structure	Alcohol interactions with AC VII

2: Rotation and Summer Supervision: Role as Mentor

Rotation Students

Year	Quarter	Student Name	Program	Present Position
1999	Winter	Ty Gould	Biomedical Sciences	Post Doc Univ of Texas (2007)
2000	Spring	Schoen Kruse	Biomedical Sciences	Instructor of Biochemistry (2008)
2001	Winter	Rachel Alvestad	Biomedical Sciences	Post-doctoral Research UCHSC
2002	Spring	David Zoeteway	Molecular Biology	
2002	Fall	Beth Stubblefield	Pharmacology	Post-doctoral Research UCHSC
2002	Fall	Anna Thode	Biomolecular Structure	
2003	Spring	Brigid Bucci	Biomedical Sciences	PhD. Program UCHSC
2003	Spring	Elizabeth Medina	Molecular Biology	
2004	Spring	John Laughlin	Biomedical Sciences	Postdoc Scripps Inst, Florida
2005	Fall	Brian Ziemba	Biomedical Sciences	Ph.D. Program UCHSC
2005	Winter	Joseph Cantilini	Pharmacology	
2005	Winter	Michael Guarnieri	Biochemistry	Ph.D. Program UCHSC
2006	Fall	Robert Hom	Pharmacology	Ph.D. Program UCHSC
2007	Fall	Gregory Boulet	Biomedical Sciences	Unknown
2008	Spring	Alice Castile	Biomedical Sciences	Graduate Student
2008	Spring	Jamie Collier	Biomolecular Structure	Graduate Student

Summer Students

Year	Student Name	Program	Present Position
1999	Alex Usorov	UC Boulder Work Study	MD UCHSC
1999	Zachary Wilson	BSP URM	MD Univ of New Mexico
2000	Amna Dermish	BSP Summer Student	MD UCHSC
2001	Ope Daramola	ARC URM	BA Colorado College

2002	Emily Peterson	ARC URM	BA Denver University
2003	Sylvia Alvarado	ARC URM	Pre-med UCHSC
2004	John Gonzalez	ARC URM	BA Colorado State University
2008	Chide Duru	Aspect URM	BA Metro College of Denver

3. Thesis Committee Membership Role as Advisor

Date	**Name**	**Program**	
2001-2004	Matthew Cheever	Molecular Biology	
2002-2007	Danielle Sentz	Microbiology	
2003-2007	Liam Breeze	Neuroscience	
2002-2007	Roman Brunecky	Pharmacology	
2002-2005	Patrick Li	Human Medical Genetics	
2002-Present	David Zoeteway	Molecular Biology Program	Chairperson
2004-2005	John Hammond	Molecular Biology Program	
2004	Melissa Pulfer	MSTP	
2007	Tariq Adwan	Molecular Biology	
2008	Jennifer Schlegel	Biochemistry	
2009	Jasmina Redzic	Biochemistry	
2009	Thomas Chi	Biochemistry	

H. Classroom instructional activities

Year	**Course No.**	**Title.**
1999-2000	PHCL 7630	*Molecular Biology Techniques in Pharmacology*
	PHSC 7354	*Spectroscopic Analysis of Biomolecules*
2000-2001	IDPT 7800	*Biomedical Sciences Core Course*
	PHCL 6300	*Pharmacology 1*
	PHSC 7450	*Proteins II: Protein Dynamics*
2001-2002	IDPT 7800	*Biomedical Sciences Core Course*
	PHCL 6300	*Pharmacology 1*
	MOLB 7802	*Advanced topics in molecular biology*
	BMST 7454	*Structural Analysis of Biomolecules II*
2002-2003	IDPT 7800	*Biomedical Sciences Core Course*
	PHCL 6300	*Pharmacology 1*
	PHCL 7600	*Frontiers in Pharmacology:*
	BMST 7450	*Proteins II: Protein Dynamics*
2003-2004	IDPT 7801	*Biomedical Sciences Core Course*
	PHCL 6300	*Pharmacology 1:*
	PHCL 7600	*Frontiers in Pharmacology:*
	BMST 7454	*Structural Analysis of Biomolecules II*
	PHCL 7605	*Ethics in Research*
	MOLB 7616	*Topics in Molecular and Cellular Biology*
2004-2005	IDPT 7801	*Biomedical Sciences Core Course*
	PHCL 6300	*Pharmacology 1:*
	PHCL 7605	*Ethics in Research*
	BMST 7450	*Proteins II: Protein Dynamics*
2005-2006	IDPT 7801	*Biomedical Sciences Core Course*
	PHCL 6300	*Pharmacology 1:*
	BMST 7454	*Structural Analysis of Biomolecules II*
	PHCL 7605	*Ethics in Research*
2006-2007	IDPT 7801	*Biomedical Sciences Core Course*
	PHCL 7605	*Ethics in Research*
	IDPT 6004	*Infectious Disease 3A*
2007-2008	IDPT 7801	*Biomedical Sciences Core Course*

	PHCL 7605	*Ethics in Research*	
	IDPT 6004	*Infectious Disease 3A*	
	BMST 7454	*Structural Analysis of Biomolecules II*	*8 hr*
2008-2009	IDPT 7801	*Biomedical Sciences Core Course*	*3 hr*
	IDPT 6004	*Infectious Disease 3A*	*1 hr*

Expected Teaching

2009-2010	IDPT 7801	*Biomedical Sciences Core Course*	*3 hr*
	IDPT 6004	*Infectious Disease 3A*	*1 hr*
	BMST 7454	*Structural Analysis of Biomolecules II*	*8 hr*

I. Teaching administration

2001-2003	PHCL 7620	Graduate Pharmacology Course
2003-2005	DSBS 6600	Dental Pharmacology