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## BIOGRAPHICAL SKETCH

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NAME Helen J. Wing	POSITION TITLE Assistant Professor		
eRA COMMONS USER NAME helenwing			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Nottingham, UK	B.Sc. (Hons.)	1990-1993	Biology
University of Birmingham, UK	Ph.D.	1993-1997	Molecular Biology
University of Birmingham & University of Sheffield, UK	Postdoctoral	1997-2000	Biochemistry
Massachusetts General Hospital, Boston, MA.	Postdoctoral	2000-2004	Bacterial Pathogenesis
University of Nevada, Las Vegas, NV	Asst. Prof.	2005-to date	<i>Shigella</i> Pathogenesis

### A: Positions and Honors.

#### Position and Employment.

2005-to date Assistant Professor, Department of Biological Sciences, University of Nevada, Las Vegas, NV  
2000-2004 Postdoctoral Research Fellow, Laboratory of Dr. M.B. Goldberg, Infectious Disease Division, Massachusetts General Hospital / Harvard Medical School, Boston, USA  
1997-2000 Postdoctoral Research Fellow, Laboratory of Prof. S.J.W. Busby and Prof. J.R. Guest, (F.R.S) based at the University of Birmingham, UK  
1993-1997 Ph.D. Research Student, Laboratory of Prof. S.J.W. Busby, Dept. of Biochemistry, University of Birmingham, UK

#### Other Experience and Professional Memberships.

2009-to date Member of Wind River Prokaryotic Meeting Executive Committee  
2006-to date Treasurer and Secretary of Arizona/Southern Nevada Regional Branch of ASM  
2005-to date Mentored sixteen undergraduate research projects (6 INBRE UROP students)  
2004-to date Member of the American Society of Microbiology  
2008 Mentored Clark County High School Teacher in Summer project sponsored by the NSF  
2005 Ad hoc Reviewer of NSF grant  
2005 Ad hoc reviewer of UNLV SITE proposals  
2003-2004 Chair of the 10<sup>th</sup> Boston Bacterial Meeting  
2002-2003 Fundraising officer of the 9<sup>th</sup> Boston Bacterial Meeting

#### Honors

2009 UNLV CSUN Faculty Excellence award  
2006-2008 UNLV merit award (x3)  
2005-to date Adjunct Assistant Professor at Touro University, Henderson, NV (October 2005)

### B: Peer-reviewed publications (in chronological order)

1) Savery NJ, Rhodius VA, Wing HJ, Busby SJW. 1995. Transcription activation at *Escherichia coli* promoters dependent on the cyclic-AMP receptor protein – effects of binding sequences for the RNA polymerase alpha subunit. *Biochem. J.* 309: 77-83.

- 2) Wing HJ, Williams SM, Busby SJW. 1995. Spacing requirements for transcription activation by *Escherichia coli* FNR protein. *J. Bacteriol.* 177: 6704-6710.
- 3) Savery N, Belyaeva T, Wing H, Busby S. 1996. Regulation of promoters by two transcription activators: Evidence for a 'simultaneous touching' model. *Biochem. Soc. Trans.* 24: 351-353.
- 4) Williams SM, Savery NJ, Busby SJW, Wing HJ. 1997 Transcription activation at Class I FNR-dependent promoters: identification of the activating surface of FNR and the corresponding contact site in the C-terminal domain of the RNA polymerase alpha subunit. *Nucl. Acid Res.* 25: 4028-4034.
- 5) Li B, Wing H, Lee D, Wu HC, Busby SJW. 1998. Transcription activation by *Escherichia coli* FNR protein: similarities to, and differences from, the CRP paradigm. *Nucl. Acid Res.* 26: 2075-2081.
- 6) Williams SM, Wing HJ, Busby SJW. 1998. Repression of transcription initiation by *Escherichia coli* FNR protein: repression by FNR can be simple. *FEMS Microbiol. Letts*, 163: 203-208.
- 7) Wing HJ, Green J, Guest JR, Busby SJW. 2000. Role of activating region 1 of *Escherichia coli* FNR protein in transcription activation at class II promoters. *J. Biol. Chem.* 275: 29061-29065.
- 8) Lee DJ, Wing HJ, Savery NJ, Busby SJW. 2000. Analysis of interactions between activating region 1 of *Escherichia coli* FNR protein and the C-terminal domain of the RNA polymerase alpha subunit: use of alanine scanning and suppression genetics. *Mol. Microbiol.* 37: 1032-1040.
- 9) Marshall FA, Messenger SL, Wyborn NR, Guest JR, Wing H, Busby SJW, Green J. 2001. A novel promoter architecture for microaerobic activation by the anaerobic transcription factor, FNR. *Mol. Microbiol.* 39: 747-753.
- 10) Wing HJ, Yan AW, Goldman SR, Goldberg MB. 2004. Regulation of IcsP, the outer membrane protease of *Shigella* actin tail assembly protein IcsA, by virulence plasmid regulators VirF and VirB. *J. Bacteriol.* 186: 699-705.
- 11) Wing HJ, Goldman SR, Ally S, Goldberg MB. 2005. Modulation of an outer membrane protease contributes to the virulence defect of *Shigella* carrying a mutation in the *virK* locus. *Infect Immun.* 73: 1217-1220.
- 12) Castellanos MI, Harrison DJ, Smith JM, Levy KM, Labahn SK and Wing HJ. 2009. VirB alleviates H-NS repression of the *icsP* promoter in *Shigella flexneri* from sites over 1 kb upstream of the transcription start site. *J Bacteriol.* 191: 4047-4050.
- 13) Hensley CT, Kamneva O, Levy KM<sup>1</sup>, Labahn SK, Africa LAA and Wing HJ. 2010. Two promoters and two translation start sites control the expression of the *Shigella flexneri* outer membrane protease IcsP. *Archives of Microbiology* (accepted 12/15/10)

## C: Research Support

### Ongoing Research Support

- 1 R15 AI090573-01: (reviewed by Prokaryotic Cell Molecular Biology; **Impact Score: 11**)  
 NIH: NIAID 07/01/10-06/30/13  
 "Understanding transcriptional silencing & anti-silencing mechanisms in *Shigella*" (\$405,488)  
 Role: PI
- 2P20 RR 016464 – 05  
 NIH/IDEA network of Biomedical Research Excellence (INBRE) Wing (PI) 06/01/08-05/31/11  
 "Roles and regulation of a *Shigella* protease" (\$266,000)  
 This study investigates the roles and regulation of an outer membrane protease found in *Shigella*  
 Role: Target Faculty
- 0649267  
 NSF- Research Experience for Undergraduates Regner (PI) 05/01/10-12/31/12  
 "A broad view of Environmental Microbiology at UNLV" (\$400,797)  
 This study provide 8 summer studentships for undergraduates to work with UNLV faculty in the field of environmental microbiology  
 Role: Key Personnel

### Pending Research Support

USDA-NIFA Elekonich (PI) 11/01/10-10/31/13  
"New treatments for American Foulbrood; using the microbe's biology against it" (\$335,417)  
Role: Co-PI  
Other Co-PIs: Drs. Abel-Santos, & Amy (UNLV faculty)  
Status: **Recommended for funding**

### Completed Research Support

0649267  
NSF- Research Experience for Undergraduates Regner (PI) 03/06/07-02/28/10  
"A broad view of Environmental Microbiology at UNLV" (\$254,637)  
This study provide 8 summer studentships for undergraduates to work with UNLV faculty in the field of environmental microbiology  
Role: Key Personnel

0649267  
NSF Supplement - Research Experience for Teachers Wing (PI) 06/06/08-02/28/10  
"A broad view of Environmental Microbiology at UNLV" (\$15,000)  
This supplement supports a high school teacher to work with Dr. Wing in the field of Environmental Microbiology  
Role: Mentor

0649267  
NSF Supplement - Research Opportunity Award Wing (PI) 06/06/08-02/28/10  
"A broad view of Environmental Microbiology at UNLV" (\$17,500)  
This supplement supports a professor from a tertiary college to work with Dr. Wing in the field of Environmental Microbiology  
Role: Mentor

New Investigator Award Wing (PI) 06/01/06-05/31/08  
University of Nevada, Las Vegas (\$15,000)  
"Identification of additional roles of IcsP, a bacterial protease of the pathogen *Shigella flexneri*"  
This study demonstrated that IcsP does not protect *Shigella* from the action of cationic antimicrobial peptides  
Role: PI

UNLV President's Research Award Wing (PI) 06/01/07-05/31/09  
"Support of graduate projects focusing on microbial interactions with plant and animal cells."  
These funds were used to purchase a 100x objective for the confocal microscope housed in the Bio-imaging facility at UNLV and to pay fees for use of this facility.  
Role: PI (\$50,000; partially funded \$6,000)