

CURRICULUM VITAE

1. PERSONAL DATA

Surname : HUGHES
Given Name : Kelly
Sex : Male
Date and Place of Birth : 6th of July 1957 in Inglewood, California, USA
Nationality : USA, Republic of Ireland (dual)
Marital status : Married, 4 children

Professional address : Department of Biology
University of Utah
Salt Lake City, UT 84112
Tel: 801-587-3367

Languages : English (native)
French (good knowledge and speaking ability)

2. PRESENT POSITION

Position Title : Professor (since 2002)
Year of entry : May 2005

3. DIPLOMAS

University

06/80 B.S., University of California, Irvine
Majors: Biological Sciences and Chemistry
Research Project: Study of the Regulation of Fatty Acid Degradation in
E. coli

Post-Graduate studies

12/84 Ph.D. , Department of Biology, University of Utah
Thesis title : Study of the Genetics and Regulation of NAD Metabolism in
Salmonella typhimurium

4. TRAINING AND EDUCATION SINCE SECONDARY SCHOOL DIPLOMA

Start date-06/80 B.S., University of California, Irvine
Majors: Biological Sciences and Chemistry
07/79-09/80 Laboratory of Dr. William D. Nunn, University of California, Irvine
(Project: Study of the Regulation of Fatty Acid Degradation in *E. coli*)
10/80-07/85 Ph.D. , Department of Biology, University of Utah
Laboratories of Dr. John R. Roth (Genetics/Gene Regulation) and Dr.
Baldomero M. Olivera (Enzymology/Physiology), University of Utah
(Project: Study of the Genetics and Regulation of NAD Metabolism in
Salmonella typhimurium)

5. PROFESSIONAL ACTIVITIES (POST-GRADUATE)

- 08/85-06/86 Post-doc, Laboratory of Dr. George M. Weinstock, University of Texas (Project: Regulation of *recA* gene expression in *E. coli*)
- 07/86-05/89 Post-doc, Laboratory of Dr. Melvin I. Simon, Division of Biology, California Institute of Technology, Pasadena, CA (Project: Genetic Characterization of Hin-Mediated Site-Specific Recombination)
- 06/89-03/95 Assistant Professor, Department of Microbiology, University of Washington, Seattle, WA
- 04/95-06/01 Associate Professor, Department of Microbiology, University of Washington, Seattle, WA
- 04/96-03/97 Visiting Professor, Laboratory of Winfried Boos, University of Konstanz, Konstanz, Germany
- 07/01-06/05 Professor, Department of Microbiology, University of Washington Seattle, WA
- 10/04-01/05 Visiting Professor, Laboratory of Guy Cornelis, Biozentrum, University of Basel, Basel, Switzerland
- 09/05-12/05 Visiting Professor, Laboratory of Keiichi Namba, Frontiers Biosciences, University of Osaka, Osaka, Japan
- 06/05-07/10 Professor, Department of Biology, University of Utah
- 07/10-06/11 Professional Leave Of Absence from University of Utah
Professeur Ordinaire, Departments of Biology and Medicine, University of Fribourg, Switzerland
- 07/11- Professor, Department of Biology, University of Utah

6. HONORS AND AWARDS

- 2022 Elected Fellow, American Association for the Advancement of Science
- 2017 University of Utah Distinguished Scholarly & Creative Research Award
- 2008 Division J lecturer, American Society for Microbiology General Meeting
- 2005, 2007 Visiting Professor fellowship, Osaka University, Japan
- 2004 Qualified Irish Whiskey Taster, The Old Jameson Distillery, Dublin, Ireland
- 2003 Elected Fellow, American Academy for Microbiology
- 2001 Japanese Society for the Promotion of Science Fellowship Award
- 1996-1997 Fogarty International Fellowship
- 1994-1999 American Cancer Society Faculty Research Award
- 1990-1993 American Cancer Society Junior Faculty Research Award
- 1990 Vector Young Investigator Award. American Society for Microbiology
- 1985 Postdoctoral Fellowship from the American Cancer Society. This 2-year award was returned in favor of the 3-year N.I.H. postdoctoral fellowship award.
- 1985-1988 Public Health Service (N.I.H.) Postdoctoral Traineeship (Individual) Grant # GM 11088

1981-1984 Public Health Service (N.I.H.) Predoctoral Traineeship (Institutional) Grant # 5 T32 GM07464

7. PUBLICATIONS

Original articles published or accepted in peer reviewed journals

PLoS Genet

- Qu, D., M. Jiang, C. Duffin, K.T. Hughes, and F.F.V. Chevance. Targeting early substrates, FlgB and FlgC, for flagellar-dependent type III secretion in *Salmonella*. *PLoS Genetics* (2022), **18**: e1010313.
- Hendriksen, J.J., H.J. Lee, A.J. Bradshaw, K. Namba, F.F.V. Chevance, T. Minamino, and K.T. Hughes. Genetic Analysis of the *Salmonella* FliE Protein That Forms the Base of the Flagellar Axial Structure. *mBio* (2021), **12**: e0239221.
- Johnson, S., E. J. Furlong, J.C., Deme, A.L. Nord, J. Caesar, F.F.V. Chevance, R.M. Berry, K.T. Hughes, and S.M. Lea. Molecular structure of the intact bacterial flagellar basal body. *Nature Microbiol.* (2021), **6**: 712-721.
- Plitnick, J., F.F.V. Chevance, A. Stringer, K.T. Hughes, J. T. Wade. Regulatory crosstalk between motility and interbacterial communication in *Salmonella* Typhimurium. *J. Bacteriol.* (2021), **203**: e00510-520.
- Akhade, A.S., S.M. Atif, B.S. Lakshmi, N. Dikshit, K.T. Hughes, A. Qadri, and N. Subramanian. Type 1 interferon-dependent repression of NLRC4 and iPLA2 licenses downregulation of *Salmonella* flagellin inside macrophages. (2020), *Proc. Nat. Acad. Sci. USA*, **117**: 29811-29822.
- Wozniak, C.E., J.J. Hendriksen, B.M. Olivera, J.R. Roth and K.T. Hughes. Integration of the pSLT plasmid into the *Salmonella* chromosome results in a temperature-sensitive growth defect due to aberrant DNA replication. *J. Bacteriol.* (2020), **202**: e00380-20.
- Horstmann, J., M. Lunelli, H. Cazzola, J. Heidemann, C. Kühne, P. Steffen, S. Szefs, C. Rossi, R. Lokareddy, C. Wang, L. Lemaire, K. Hughes, C. Uetrecht, H. Schlüter, G. Grassl, T. Stradal, Y. Rossez, M. Kolbe, and M. Erhardt. Methylation of *Salmonella* Typhimurium flagella promotes bacterial adhesion and host cell invasion. *Nat. Commun.* (2020), **11**: 2013.
- Wozniak, C.E., Z. Lin, E.W. Schmidt, K.T. Hughes, and T.G. Liou. Thailandamide, a fatty acid synthesis antibiotic that is coexpressed with a resistant target gene. *Antimicrob. Agents Chemother.* (2018), **62**: e00463-18.
- Ward, E., T.T. Renault, M. Erhardt, K.T. Hughes, and D.F. Blair. Type-III Secretion Pore Formed by Flagellar Protein FliP. *Molec. Microbiol.* (2018), **107**: 94-103.
- Asmar, A., J.L. Ferreira, E.J. Cohen, S.-H. Cho, M. Beeby, K.T. Hughes, and J.F. Collet. Communication across the bacterial cell envelope depends on the size of the periplasm. *PLOS Biology* (2017), **15**: e2004303.
- Paradis, G., F.F.V. Chevance, W. Liou, T.T. Renault, K.T. Hughes, S. Rainville, M. Erhardt. Variability in bacterial flagella re-growth patterns after breakage. *Sci Rep.* (2017) **7**:1282

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- Tu, J., T. Park, D.R. Morado, K.T. Hughes, I.J. Molineux, J. Liu. Dual host specificity of phage SP6 is facilitated by tailspike rotation. *Virology* (2017) **507**: 206-215.
- Cohen, E.J., J. Ferreira, M.S. Ladinsky, M. Beeby, and K.T. Hughes. Nano-scale length control of the flagellar drive-shaft requires hitting the protein-tethered outer membrane. *Science* (2017), **356**: 197-200.
- Chevance, F.F.V., and K.T. Hughes. Case for the genetic code as a triplet-of-triplets. *Proc. Natl. Acad. Sci. USA*. (2017), **114**: 4745-4750.
- Fujii, T., T. Kato, K.D. Hiraoka, T. Miyata, T. Minamino, F.F. Chevance, K.T. Hughes, and K. Namba. Identical folds used for distinct mechanical functions of the bacterial flagellar rod and hook. *Nat. Commun.* (2017) **8**:14276 (1-10).
- Erhardt, M., P. Wheatley, E.A. Kim, T. Hirano, Y. Zhang, M.K. Sarkar, K.T. Hughes, and D.F. Blair. Mechanism of type-III protein secretion: Regulation of FlhA conformation by a functionally critical charged-residue cluster. *Mol. Microbiol.* (2017), **104**: 234-249.
- Hughes, K.T. Mg²⁺-dependent translational speed bump acts to regulate gene transcription. *Proc. Natl. Acad. Sci. USA*. (2016), **113**: 14881-14883
- Hengge, R., M.Y. Galperin, J.M. Ghigo, M. Gomelsky, J. Green, K.T. Hughes, U. Jenal, and P. Landini. Systematic nomenclature for GGDEF and EAL domain-containing cyclic di-GMP turnover proteins of *Escherichia coli*. *J. Bacteriol.* (2015) **198**: 7-11.
- Wee, D.H., and K.T. Hughes. A molecular ruler determines needle length for the *Salmonella* Spi-1 injectisome. *Proc. Natl. Acad. Sci USA* (2015), **112**: 4098-4103.
- Hendrix, R.W., C.C. Ko, D. Jacobs-Sera, G.F. Hatfull, M. Erhardt, K.T. Hughes, and S.R. Casjens. Genome sequence of *Salmonella* phage χ . *Genome Announc.* (2015) **3**: e01229-14.
- Sato, Y., A. Tayaka, C. Mouslim, K.T. Hughes, and T. Yamamoto. FliT selectively enhances proteolysis of FlhC subunit in FlhD4C2 complex by an ATP-dependent protease, ClpXP. *J. Biol. Chem.* (2014) **289**: 33001-33011.
- Erhardt, M., M.E. Mertens, F.D. Faniani, and K.T. Hughes. ATPase-independent type-III protein secretion in *Salmonella enterica*. *PLoS Genetics* (2014), **10**: e1004800.
- Singer, H.M., M. Erhardt, and K.T. Hughes. Comparative analysis of the secretion capability of early and late flagellar type III secretion substrates. *Molec. Microbiol.* (2014), **93**: 505-520.
- Cohen, E.J., and K.T. Hughes. Rod to hook transition for extracellular flagellum assembly is catalyzed by the L-ring-dependent rod-scaffold removal. *J. Bacteriol.* (2014), **196**: 2387-2395.
- Guo, S., I. Alshamy, K.T. Hughes, and F.F.V. Chevance. Analysis of factors that affect FlgM-dependent type III secretion for protein purification with *Salmonella* Typhimurium. *J. Bacteriol.* (2014), **196**: 2333-2347.
- Chevance, F.F.V., S. Le Guyon, and K.T. Hughes. The effects of codon context on *in vivo* translation speed. *PLoS Genetics* (2014), **10**: e1004392.

- Mouslim, C., and K.T. Hughes. The effect of cell growth phase on the regulatory cross-talk between flagellar and Spi1 virulence gene expression. *PLoS Pathog.* (2014), **10**: e1003987.
- Singer, H.M., C. Kühne, J.A. Deditius, K.T. Hughes, and M. Erhardt. The *Salmonella* Spi1 virulence regulatory protein protein HlD directly activates transcription of the flagellar master operon *flhDC*. *J. Bacteriol.* (2014), **196**: 1448-1457.
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- Kawamoto, A., Y.V. Morimoto, T. Miyata, T. Minamino, K.T. Hughes, T. Kato, and K. Namba. Common and distinct structural features of *Salmonella* injectisome and flagellar basal body. *Sci Rep.* (2013), **3**: 3369.
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- Singer, H.M., M. Erhardt, A.M. Steiner, M.M. Zhang, D. Yoshikami, G. Bulaj, B.M. Olivera, and K.T. Hughes. Selective purification of recombinant neuroactive peptides using the flagellar type III secretion system. *MBio* (2012), **3**: 1-9.
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- Erhardt, M., H.M. Singer, D.H. Wee, J.P. Keener, and K.T. Hughes. An Infrequent Molecular Ruler Controls Flagellar Hook Length in *Salmonella enterica*. *EMBO J.* (2011), **30**: 2948-2961.
- Wozniak, C.E., F.F.V. Chevance, and Hughes KT. Multiple promoters contribute to swarming and the coordination of transcription with flagellar assembly in *Salmonella*. *J. Bacteriol.* (2010), **192**: 4752-4762.
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- Hirano, T., N. Takahashi, S.-I. Aizawa, and K.T. Hughes. Mutants in Flk, FlgG, FlhA and FlhE that affect the flagellar type III secretion specificity switch in *Salmonella enterica*. *J. Bacteriol.*, (2009) **191**: 3938-3949.
- Wozniak, C.E., C. Lee, and K.T. Hughes. T-POP array identifies EcnR and PefI-SrgD as novel regulators of flagellar gene expression. (2009) *J. Bacteriol.*, **191**: 1498-1508.
- Wozniak, C.E. and K.T. Hughes. Genetic dissection of the consensus sequence for the class 2 and class 3 flagellar promoters. (2008) *J. Mol. Biol.*, **379**: 936-952.
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- Chevance, F.F.V., N. Takahashi, J.E. Karlinsey, J. Gnerer, T. Hirano, R. Samudrala, S.-I. Aizawa and K.T. Hughes. The mechanism of outer membrane penetration by the eubacterial flagellum and implications for spirochete evolution. *Genes Dev.* (2007) **21**: 2326-2335.
- Shibata, S., N. Takahashi, F.F.V. Chevance, J.E. Karlinsey, K.T. Hughes and S.-I. Aizawa. FliK regulates flagellar hook length as an internal ruler. *Mol. Microbiol.* (2007) **64**: 1404-1415.
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- Rosu, V., F.F.V. Chevance, J.E. Karlinsey and K.T. Hughes. Translation inhibition of the *Salmonella fliC* gene by *fliC*-5'UTR and *fliC*-coding sequences and FlgM. *J. Bacteriol.* (2006) **188**: 4497-4507.
- Aldridge, P.D., J. Gnerer, J.E. Karlinsey and K.T. Hughes. Transcriptional and translational control of the *Salmonella fliC* gene. *J. Bacteriol.* (2006) **188**: 4487-4496.

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- Aldridge, P.A., J.E. Karlinsey, E. Becker, F.V.V. Chevance and K.T. Hughes. Flk prevents premature secretion of the anti- σ factor FlgM into the periplasm. *Mol. Microbiol.* (2006) **60**:630-643.
- Lee, H.J., and K.T. Hughes. Post transcriptional control of the *Salmonella enterica* flagellar hook protein FlgE. *J. Bacteriol.* (2006) **188**: 3308-3316.
- Frye, J., J.E. Karlinsey, H.R. Felise, B. Marzolf, N. Dowidar, M. McClelland, and K.T. Hughes. Identification of new flagellar genes of *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* (2006) **188**: 2233-2243.
- Chevance, F.F.V., J.E. Karlinsey, C.E. Wozniak and K.T. Hughes. A little gene with big effects: a *serT* mutant is defective in *flgM* gene translation. *J. Bacteriol.* (2006) **188**: 297-304.
- Karlinsey, J.E., and K.T. Hughes. Genetic transplantation: *Salmonella enterica* serovar Typhimurium as a host to study sigma-factor and anti-sigma-factor Interactions from genetically intractable systems. *J. Bacteriol.* (2006) **188**: 103-114.
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- Hughes, K.T., D. Ladika, J.R. Roth, and B.M. Olivera. An indispensable gene for NAD biosynthesis in *Salmonella typhimurium*. *J. Bacteriol.* (1983) **155**: 213-221.
- Hughes, K.T., B.T. Cookson, D. Ladika, B.M. Olivera, and J.R. Roth. 6-Aminonicotinamide-resistant mutants of *Salmonella typhimurium*. *J. Bacteriol.* (1983) **154**: 1126-1136.
- Simons, R.W., K.T. Hughes, and W.D. Nunn. Regulation of fatty acid degradation in *Escherichia coli*: Dominance studies with strains merodiploid in gene *fadR*. *J. Bacteriol.* (1980) **143**: 726-730.

Reviews published or accepted in peer reviewed journals

- Hughes, K.T. and F.F.V. Chevance. "Lost in translation: Seeing the forest by focusing on the trees". *RNA Biol.* (2018), invited "Point of View", **15**:182-185.
- Hughes, K.T. and H.C. Berg. The bacterium has landed. *Science* (2017), invited Perspective, **358**: 446-447.
- Hughes, K.T. Flagellum length control: How long is long enough? *Curr Biol.* (2017) **27**: R413-R415
- Hughes KT. Mg²⁺-dependent translational speed bump acts to regulate gene transcription. *Proc Natl Acad Sci U S A* (2016) **113**:14881-14883.
- Hughes, K.T. The locus of enterocyte effacement type III secretion-specificity switch: the devil's in the data for a common mechanism. *J. Bacteriol.* (2012) **194**: 6019-6022.
- Hughes, K.T. Rebuttal: Mystery of FliK in length control of the flagellar hook. *J. Bacteriol.* (2012) **194**: 4801.
- Hughes, K.T. Flagellar hook length is controlled by a secreted molecular ruler. *J. Bacteriol.* (2012) **194**: 4793-4796.
- Chevance, F.F.V. and K.T. Hughes. Coordinating assembly of a bacterial macromolecular machine. *Nature Rev. Microbiol.* (2008) **6**: 455-465.
- Hughes, K.T. Keeping your lawn wet. *EMBO Rep.* (2005) **6**: 518-519.
- Journet, L., K.T. Hughes and G. Cornelis. Type III secretion: a secretory pathway serving both motility and virulence. *Molec. Membrane Biol.* (2005) **22**: 41-50.
- Aldridge, P.D., and K.T. Hughes. Regulation of flagellar assembly. *Curr. Opin. Microbiol.* (2002) **5**: 160-165.
- Aldridge, P.D., and K.T. Hughes. Type III secretion: How and when are substrates selected. *Trends Microbiol.* (2001) **9**: 209-214.
- Hughes, K.T., and P.D. Aldridge. Putting a lid on it. *Nature Struc. Biol.* (2001) **8**: 96-97.
- Chilcott, G.S. and K.T. Hughes. The Coupling of Flagellar Gene Expression to Flagellar Assembly in *Salmonella typhimurium* and *Escherichia coli*. *Microbiol. & Molec. Biol. Rev.* (2000) **64**: 694-708.
- Hughes, K.T. and K. Mathee. The anti-Sigma Factors. *Annu. Rev. Microbiol.* (1998) **52**: 231-286.
- Brown, K. L., and Hughes, K. T. The role of anti-sigma factors in gene regulation. *Molec. Microbiol.* (1995) **16**: 397-404.

Books

- Maloy, S.M., J. Casadesús and K.T. Hughes, eds. "Bacterial Genetics: A tribute to John Roth". (2010). American Society for Microbiology Press, Washington, D.C.

Hughes, K.T. and S.M. Maloy, eds. "Advanced Bacterial Genetics: Use of Transposons and Phage for Genomic Engineering". *Methods in Enzymology* (2007) vol. 421: Elsevier Press.

Reference Books

Maloy, S.M. & K.T. Hughes, eds. "Brenner's Encyclopedia of Genetics", 2nd Edition (2013), Elsevier Press.

Maloy, S.M. & K.T. Hughes, eds. "Brenner's Encyclopedia of Genetics", Online Edition (2017), Elsevier Press.

Book Chapters

Chevance, F.F., K.T. Hughes. Coupling of flagellar gene expression with assembly in *Salmonella enterica*. *Methods Mol Biol.* (2017) **1593**:47-71.

Blair, D.F., and K.T. Hughes. Evolution of complex structures: the case of the bacterial flagellum. In "Microbes and the Origin of Species", R. Kolter and S.M. Maloy, eds., American Society for Microbiology Press, Washington, D.C. (2012).

Hughes, K.T., and M. Erhardt. Bacterial Flagella. Online reference *els*, John Battista editor, Wiley-Blackwell publishers (2011).

Lee, C., C. Wozniak, J.E. Karlinsey, and K.T. Hughes. Genomic screening for regulatory genes using the T-POP transposon. *Meth. Enz.* (2007) 421: 159-167.

Erhardt, M., K. Namba and K.T. Hughes. Bacterial nanomachines: the flagellum and type III injectisome. In "Prokaryote Cell Biology", L. Shapiro and R. Losick, eds. Cold Spring Harbor Press, Cold Spring Harbor, N.Y. (2010).

Hughes, K.T., and S.R. Maloy. Use of operon and gene fusions to study gene regulation in *Salmonella*. *Meth. Enz.* (2007) **421**: 140-158.

Hughes, K.T. Generation of deletions and duplications using transposons as portable regions of homology with emphasis on Mud and Tn10 transposons. *Meth. Enz.* (2007) **421**: 51-68.

Maloy, S.R., and K.T. Hughes. Strain collections and genetic nomenclature. *Meth. Enz.* (2007) **421**: 3-8.

Glasgow, A.C., K.T. Hughes, and M.I. Simon. Bacterial DNA inversion systems. In: Mobile DNA. (1989) D. Berg and M. Howe, eds., American Society for Microbiology, Washington, D.C.

Olivera, B.M., K.T. Hughes, P. Corday, and J.R. Roth. Aspects of NAD metabolism in prokaryotes and eukaryotes. In: Niacin, Nutrition, ADP-Ribosylation and Cancer. (1987) M. Jacobson and E. Jacobson, eds.

Obituaries

Hughes, K.T. and S.R. Maloy. REMEMBRANCE: Robert W. Simons. *Molec. Microbiol.* (2019) **112**: 333-334.

Thesis

Regulation of NAD Biosynthesis in *Salmonella typhimurium*
Department of Biology, University of Utah, Salt Lake City, UT, USA, December 1984.

8. TEACHING

University of Utah current teaching responsibilities:

BIOL 5255 Microbial genetics lecture lab course (Spring semester)
BIOL 6140 Advanced Genetics (Fall with Kent Golic and Erik Jorgensen)

University of Fribourg former teaching responsibilities:

Department of Medicine: Chargé des cours Med3 Microbiology
Department of Pharmacy: Chargé des cours Med3 Microbiology

University of Utah former teaching responsibilities:

BIOL 7962 Seminal Papers in Biology (Spring semester)
MBIOL 6420 Genetics and Genome (4 lecture Microbiology component, Fall)
Biology 2030 Genetics, Fall semester 2006, 2021
Biology 5255 Microbial genetics lecture lab course, Summer 2007; Fall 2008

University of Washington former teaching responsibilities:

Micro 510 "Microbial Physiology", Winter 1991 responsible for course organization, responsible for 3 lecture hours 2001-2005
Micro 411 "Microbial Genetics", Winter 1990-92 (10 lecture hours)
Micro 411 "Gene Action", Winter 1993- 2006 (15 lecture hours + 20 lab hours, 2005 Syllabus is appended).
Micro 520 "Department Seminar" 1991 – 2001 (30 hours)
Micro 522 "Current Research in Microbiology" 1999 - 2005 (30 hours)
Micro 527 "Genetic Approach to Complex Biological Processes" 1994 – 2005 (30 hours)
Micro 528 "Salmonella Genetics" 1994 – 2005 (30 hours)
Micro 553 "Molecular Mechanisms of Bacterial Pathogenesis" 2001-2005 (30 hours)
Effective Winter 1993, Micro 411 was changed from a 3 unit lecture-only course to a 5 unit lecture lab course co-taught between the Microbiology and Genetics Departments by the actions of Kelly Hughes and Colin Manoil, lecturers for Microbiology and Genetics, respectively.
Vertiwenkurs Spring 1997, University of Konstanz, Konstanz Germany (24 hours)

Special Teaching Responsibilities:

Instructor, Advanced Bacterial Genetics Course, Cold Spring Harbor Laboratory, June 2001-2005 (40 lecture and 160 lab hours)

Instructor, Genetic Approaches to Pathogenesis, Universidad, Andrés Bello, Santiago Chile, January 2013 (two week (40 lecture hours) intensive course)

9. RESEARCH

RESEARCH INTERESTS

Regulation, evolution and assembly of the bacterial flagellum. Mechanism of Type III secretion. Mechanisms of mRNA translation.

Composition of Current Research Team Personnel :

- Research Ass. Prof. : Fabienne Chevance
- Postdoc : Christopher Wozniak
- PhD students : Madison Schrock
- Master's student :
- BS students : Angus Wu, Ty Mellor, Lane Wilson, Julianna Matteis
- Technician : Michael Gerber

10. ADMINISTRATION

Current Committee Responsibilities UU

School of Biological Sciences Website Committee

Past Committee Responsibilities UU

College of Science Faculty Promotion & Retention Committee

Department of Biology Safety Committee

Department of Biology Executive Committee

University of Utah Faculty Senate

Department of Biology Graduate Recruitment Committee

Cell Biology Faculty Search Committee

Department of Biology Graduate Admissions Committee

Interdisciplinary Molecular and Cellular Biology Program Graduate Admissions Committee

Department of Biology Microbiology Program Graduate Admissions Committee

Committees at UW (known since 1995)

Graduate Admissions and Policy Committee, 1991 - 2001

Helen Whitely Memorial Speaker Selection Committee, 1993-present

Molecular Biology Training Grant Selection Committee, 1992-1996, 1999 - 2000

Microbiology Faculty Recruitment Committee 1999/2000

Microbiology/Lab Medicine Faculty Recruitment Committee 2000

Corporate Affiliation Committee 1999 - 2002

Undergraduate curriculum committee 2002 – 2005

Special Meeting Responsibilities

Meeting Co-organizer (with Fadel Samatey): Bacterial Flagella & Type III Secretion Systems. Okinawa Institute of Science & Technology, Japan, March, 2017.

Meeting Co-organizer (with Julie Gross, and Sue Slechta): Genetic Analysis of Complex Biological Processes. Alta, Utah, October, 2013.

Meeting Organizer: Cold Spring Harbor 60th Anniversary Symposium for the Phage/Advanced Bacterial Genetics course. Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, June 25/26, 2005.

Symposium Co-organizer (with D.M. Hinton): 105th General Meeting American Society for Microbiology. Division H/J Symposium: “Taking Over RNA Polymerase: Anti-Sigma Factors and Sigma Mimics”, June, 2005.

Colloquial Chair, American American Society for Microbiology, National Meeting. New Orleans, LA, May, 2004.

Session Chair, 100th General Meeting American Society for Microbiology. Los Angeles, CA, May, 2000.

Meeting Co-organizer (with Stanley Maloy, Anca Segall, and Josep Casadesus): Genetic Analysis of Complex Biological Processes. Snowbird, Utah, October, 1999.

Meeting Co-organizer (with Stanley Maloy and Anca Segall): Genetic Analysis of Complex Biological Processes. Snowbird, Utah, October, 1996.

Symposium Co-chair, 96th General Meeting, American Society for Microbiology, Division H. New Orleans, LA, May, 1996.

Meeting Co-organizer (with Stanley Maloy and Anca Segall): Genetic Analysis of Complex Biological Processes. Snowbird, Utah. October, 1993.

Meeting Co-organizer (with Stanley Maloy): Genetic Analysis of Complex Biological Processes. Asilomar, California. February, 1991.

Editorial Responsibilities

Member, *mBio* Board of Editors, starting date: 1 July 2019

Co-editor with Stanley Maloy: “Brenner’s Encyclopedia of Genetics”, 3rd Edition, Elsevier Press. – in progress.

11. TECHNICAL AND SCIENTIFIC ROLES

Special Review Responsibilities:

Ad hoc Reviewer, N.I.H. ZRG1 IDIA-Y (80) Study Section, June 2022

Ad hoc Reviewer, N.I.H. ESI MIRA Study Section, February 2022

Ad hoc Reviewer, N.I.H. ZRG1 IDM-V (07) Study Section, December 2020

Ad hoc Reviewer, June 2018 Board of Scientific Counselors (BSC) Review Meeting for the Division of Intramural Research (DIR), in the NIAID, at the NIH Rocky Mountain Labs.

Reviewer, N.I.H. ZRG1 F13-Z, Fellowship: Infectious Diseases and Microbiology, July 2017

Reviewer, N.S.F. Fungal and Microbial Development Panel, March 2017

Reviewer, N.I.H. PCMB Study Section, June 2015

Reviewer, N.I.H. ZRG1 BCMC-B 02 Study Section, June 2011

Reviewer, N.I.H. Special Emphasis Panel/Scientific Review Group 2008/01 ZRG1 IDM-A (90) S - Topics In Pathogenesis meeting, 1/2 November 2007

Chair, N.I.H. ZRG1 VR 02 Study Section, November 2002.

ad hoc reviewer, N.I.H. ZRG1 EVR 01 Study Section, March 2002.

ad hoc reviewer, N.I.H. Microbial Physiology & Genetics SS 2, March 2001.

ad hoc reviewer, N.I.H. Microbial Physiology & Genetics SS 2, September 1999.

12. GRANTS

Research Support:

Current:

R01 GM056141 (Hughes) 1 July 2020 - 30 June 2024
DHHS/NIH/NIGMS

Coupling Gene Expression to Flagellar Morphogenesis

The major goals of this project are to characterize the flagellar transcriptional hierarchy that regulates flagellar gene expression in accordance to the degree of completion of the flagellar organelle.

13. PATENTS

Licensure/ Patent: "Mechanism of Type III Secretion in Gram-Negative Bacteria-Inhibition for Drug Design & Coupled mRNA Co-Translation/Secretion protein Purification System"
University of Washington Office of Technology Transfer Ref#2641-3388DL.

14. THESIS DIRECTOR

Former Graduate Students Supervised

Dara Niketic M.S., July 2021

Eli Cohen, Ph.D., December 2017

Daniel Wee, PhD, April 2015

Hanna Singer, PhD, September 2014.

Marc Erhardt, PhD, April 2011.

Hanna Singer, Diploma Thesis, October 2009.

Soazig Le Guyon Diploma Thesis, August 2006.

Christopher Wozniak, Ph.D., December 2008.

Jie Zhang, M.S., September 2008.

Marc Erhardt, Diploma Thesis, December 2006.

Heather Bonifield, PhD., December 2002.

Oliver Nanassy, Ph.D., March 1999.

Curtis Adams, Ph.D. , December 1998.

Gavin Chilcott, Ph.D., December 1998.

Meggen Chadsey, Ph.D., December 1998.

Karen Gillen, Ph.D., December 1993.

Andrew Lineau, M.S., September 1992.

Current Graduate Students

Madison Schrock (Ph.D.)

15. Postdoctoral fellows supervised

Former:

Valentina Rosu – currently Research Associate, Dipartimento di Scienze Biomediche, Sezione di Microbiologia, Università degli studi di Sassari, Sassari, Italy

Philip Aldridge – currently Senior Lecturer, Institute for Cell & Molecular Sciences, Newcastle University, Newcastle upon Tyne, United Kingdom

Hee-Jun Lee – Pharmacology Company, South Korea

Kelly Winterberg – currently Project Leader, Biofire Diagnostics, Salt Lake City, UT

Takanori Hirano. Research Scientist, Kennesaw State University, GA

Shukui Gao – Research Scientist, Wuhan Institute of Bioengineering, China

Marc Erhardt – Professor equivalent, Humboldt University, Berlin, Germany

Chakib Mouslim – biotech company in Chicago

Current:

Fabienne Chevance, Ph.D., Dr. Rer. Nat., Research Associate Professor

16. Undergraduate research students supervised:

There have been about 200 undergraduate research students that have work in the Hughes lab over the years. Almost all have gone to professional schools (medical, Ph.D programs, dentistry, etc.) followed by careers in the medical, biotech and academic fields. Dr. Hughes began his career as an undergraduate research with Robert Simons in Prof. William Nunn's lab at UC Irvine and has accepted any undergraduates wishing to gain research experience into his lab.

17. INVITED LECTURES

Annual Meeting, American Society for Microbiology, March 1987.

Department of Microbiology, Stanford University, Stanford, California, February 1988.

Department of Molecular Biology, University of Southern California, March 1988.

XVIth International Congress of Genetics, Toronto, Canada, August 1988.

Genetic Analysis of Complex Biological Processes. Asilomar, California. February 1989.

Department of Microbiology, University of Texas, San Antonio, March 1989.

West Coast Genetics Conference, Lake Arrowhead, California, January 1990.

Department of Biochemistry, University of Alabama, Birmingham, February 1990.

Department of Microbiology, University of Illinois, Urbana, April 1990.

10. Annual Meeting, American Society for Microbiology, Anaheim, CA, March 1990.

Department of Genetics, University of Washington, Seattle, October 1990.

Department of Biology, University of Utah, Salt Lake City, December 1990.

Genetic Analysis of Complex Biological Processes. Asilomar, California. February 1991.

Department of Microbiology, University of California, Los Angeles, June 1991.

Department of Medical Microbiology, Stanford University, Stanford, California, October 1991.

Department of Pathobiology, University of Washington, Seattle, October 1991.

Department of Bacteriology and Biochemistry, University of Idaho, Moscow, April 1992.

Department of Microbiology and Immunology, University of Oregon Health Sciences Center, Portland, May 1992.

Advanced Bacterial Genetics Course, Cold Spring Harbor, New York, June 1992.

20. Department of Microbiology and Immunology, Emory University, Atlanta, Georgia, November 1992.

Marine Biology Institute, University of Philippines, Quezon City, Philippines, January 1993.

Department of Biology, University of Utah, Salt Lake City, April 1993.

Department of Microbiology, Washington State University, Pullman, Washington, September, 1993.

Department of Microbiology, Cornell University, Ithaca, New York, September, 1993.

Analytical Genetics Meeting. Snowbird, Utah, October 1993.

Department of Microbiology, Stanford University, Stanford, California, December 1993.

West Coast Bacterial Physiology Meeting, Asilomar, California, December 1993.

Fred Hutchinson Cancer Research Center, Seattle, Washington, February 1994.

Department of Molecular Microbiology, Washington University, St. Louis, Missouri, April 1994.

30. Molecular Microbiology and Microbial Pathogenesis Course, Washington University, St. Louis, Missouri, April 1994.

Department of Microbiology, University of Illinois, Urbana, April 1994.

Unité de Génétique Moléculaire, Institut Pasteur, Paris, France, May 1994.

Departamento de Genética, Universidad de Sevilla, Sevilla, Spain, May 1994.

Department of Microbiology and Molecular Genetics, University of Texas, Houston, May 1994.

Gordon Research Conference on Microbial Toxins and Pathogenicity, July 1994.

Gordon Research Conference on Bacterial Cell Surfaces, July 1994.

International Symposium "Motility and Signal Transduction in Bacteria," Hakone, Japan, August 1994.

XVI IUBMB Congress, New Delhi, India, September 1994.

Satellite Meeting: XVI IUBMB "Transposition and Site-Specific Recombination," Bombay, India, September 1994.

40. Department of Microbiology, University of Alabama, Birmingham, November, 1994.

Department of Biochemistry and Molecular Biology, University of California, Berkeley, March 1995.

Department of Molecular Biology, Princeton University, Princeton, New Jersey, March, 1995.

Department of Microbiology, SUNY, Stony Brook, New York, April, 1995.

FASEB Summer Research Conference "Transcription Initiation in Prokaryotes", July 1995.

Nexstar, Inc., Denver, Colorado, August, 1995.

Department of Microbiology, University of British Columbia, Vancouver, B.C., October 1995.

Department of Microbiology, Texas A&M University, College Station, Texas, October 1995.

Department of Cellular & Molecular Biology, Harvard University, Boston MA, April 1996.

Graduate Genetics Course, Harvard University, Boston, MA, April 1996.

50. 96th General Meeting American Society for Microbiology, Division H symposium, New Orleans, LA, May 1996.

Department of Bacteriology, University of Wisconsin, Madison, WI, August 1996.

44th Harden Conference "The Biochemical Basis of Microbial Morphogenesis," Cirencester, UK, September 1996.

Bristol-Meyers Squibb Co. Princeton, NJ, October 1996.

Analytical Genetics Meeting. Snowbird, Utah, October 1996.

Department of Biology, University of Malaysia, Kuala Lumpur, Malaysia, December 1996.

Department of Microbiology, University of Connecticut, Farmington, CT, January 1997.

Department of Biology, California State University, San Diego, CA, March 1997.

Fakultaet fuer Biologie, Universitaet Konstanz, Konstanz, Germany, April, 1997

Biozentrum, University of Basel, Basel, Switzerland, June, 1997

60. Department of Genetics, John Innes Center, Norwich, United Kingdom, July, 1997

Department of Microbiology, Technical University of Denmark, Copenhagen, Denmark, September, 1997

Department of Clinical Microbiology, University of Copenhagen, Copenhagen, Denmark, October, 1997

Centre de Génétique Moléculaire du CNRS, Gif-sur-Yvette, France, February, 1998

Department de Genética, Universidad de Sevilla, Sevilla, Spain, March, 1998

Max Planck Institute für Biochemie, Martinsried, Germany, March, 1998

Department of Microbiology, University of Washington, Seattle, WA, May, 1998

American Society for Microbiology, NW Branch regional meeting, September, 1998

Seattle Biomedical Research Institute, Seattle, WA, October, 1998

Division of Molecular Microbiology, Biozentrum, University of Basel, Switzerland, April, 1999

70. Symposium, "Regulation of Complex Processes in Bacteria," Edinburgh, UK, April, 1999

Department of Biochemistry & Molecular Biology, Oregon Graduate Institute of Science and Technology, Portland, OR, May 1999.

Department of Microbiology, University of Iowa, Iowa City, Iowa, August, 1999.

Analytical Genetics Meeting. Snowbird, Utah, October 1999.

Department of Biochemistry and Molecular Biology, University of California, Berkeley, March, 2000
Annual Meeting, American Society for Microbiology, Los Angeles, CA, May, 2000.
Gordon Research Conference on Microbial Toxins and Pathogenicity, July, 2000.
Department of Biology, University of Utah, Salt Lake City, UT, October, 2000.
Department of Microbiology & Molecular Genetics, UCLA, Los Angeles, CA, October, 2000.
Department of Microbiology, University of Colorado Hlth Sci Ctr, Denver, CO, December, 2000

80. Department of Biochemistry, University of Michigan, Ann Arbor, MI, March, 2001
Department of Microbiology, Cardiff University, Cardiff, Wales, United Kingdom, April, 2001
Karolinska Institute, SMI, Stockholm, Sweden, April, 2001
Department of Cell and Molecular Biology, University of Umea, Umea, Sweden, April 2001
Department of Molecular Biology, University of Birmingham, Birmingham, UK, April, 2001
Department of Molecular, Cellular & Developmental Biology, University of California, Santa Barbara, CA, May, 2001
International Type III Secretion Conference, Kloster Bantz, Bavaria, Germany, May, 2001
Creatogen AG, Augsburg, Germany, May, 2001
Department of Biosciences, Teikyo University, Utsunomiya, Japan, November 2001
Advanced Technology Research Laboratories, Matsushita Electrical Industrial Co., Seika, Kyoto, Japan, November, 2001

90. Division of Biological Science, Nagoya University, Nagoya, Japan, November, 2001
Department of Molecular Genetics, National University of Genetics, Mishima, Japan, November, 2001
Seattle Biomedical Research Institute, Seattle, WA, March, 2002
Department of Microbiology and Immunology, University of Oregon Health Sciences Center, Portland, March, 2002.

102nd General Meeting American Society for Microbiology, Division H symposium; “Translation: Structure, Mechanism & Biology”, Salt Lake City, May, 2002
102nd General Meeting American Society for Microbiology, Division J symposium; “Bacterial Flagella: Assembly & Regulation”, Salt Lake City, May, 2002
Department of Molecular, Cellular & Developmental Biology, University of California, Santa Barbara, CA, September, 2002
Department of Microbiology, North Carolina State University, Raleigh, NC, November, 2002
Department of Microbiology, University of Texas, Austin, TX, December, 2002
Department of Microbiology & Immunology, University of Illinois, Chicago, IL, December, 2002

100. 10th Japanese Flagellar Meeting, Ito, Japan, March, 2003

Evergreen International Phage Meeting, The Evergreen State College, Olympia, WA, July, 2003

Northwest gene Expression Conference, Seattle, WA, August, 2003

American Society for Microbiology Conference on Salmonella pathogenesis, Sardinia, Italy, September, 2003

Department of Microbiology, Biozentrum, University of Basel, Basel, Switzerland, September, 2003

Fakultät für Biologie, Universität Konstanz, Konstanz, Germany, September, 2003

Department of Biology, University of Utah, Salt Lake City, Utah, October, 2003

Department of Microbiology & Molecular Genetics, University of California, Irvine, CA, November, 2003

Department of Biology, San Diego State University, San Diego, CA, November, 2003

Gordon Conference: "Signal Transduction in Microorganisms", Ventura, CA, January, 2004

110. University of Alberta/University of Alberta Conference on Infectious Diseases, Banff, Canada, May, 2004

Department of Molecular Physics, The Rockefeller University, New York, NY, June, 2004

Department of Microbiology, Biozentrum, University of Basel, Basel, Switzerland, October, 2004

Institute of Biochemistry, Genetics, and Microbiology, University of Regensburg, Regensburg, Germany, November, 2004

Institute for Microbial Biology, Free University Berlin, Berlin, Germany, December, 2004

Instituto de Tecnologia Quimica e Biologica, New University of Lisbon, Oeiras, Portugal, January, 2005

Departamento de Genética, Universidad de Sevilla, Sevilla, Spain, January 2005.

Department of Microbiology, University of Texas Southwestern, Dallas, TX, March, 2005

105th General Meeting American Society for Microbiology, Division H/J symposium; Atlanta, May, 2005

Department of Frontiers Biosciences, Osaka University, Osaka, Japan, October, 2005

120. Division of Biological Science, Nagoya University, Nagoya, Japan, November, 2005

Department of Frontiers Biosciences, Osaka University, Osaka, Japan, November, 2005

Gordon Conference: "Signal Transduction in Microorganisms", Ventura, CA, January, 2006

Department of Microbiology, University of Washington, Seattle, WA, February, 2006

Department of Molecular Biology, University of Umeå, Umeå, Sweden, February, 2006

Institute for Cell and Molecular Biology, University of Uppsala, Uppsala, Sweden, February, 2006.

Northwest ASM Branch meeting, Seattle, WA, March 2006

Keynote Speaker, Conference on Type III secretion Systems, NewCastle, UK, September, 2006

Department of Pathology, Cambridge University, Cambridge, UK, September, 2006

Department of Microbiology & Molecular Biology, Brigham Young University, Provo, UT,
December, 2006

130. Department of Microbiology, West Virginia University, Morgantown, WV, January 2007

Department of Microbiology, University of Georgia, Athens, GA, February 2007

Special Symposium in honor of Winfried Boos, University of Konstanz, Konstanz, Germany,
March 2007

Department of Molecular & Cellular Biology, Harvard University, Boston, MA, April, 2007

Microbial Pathogenesis Seminar Series, University of Utah, Salt Lake City, UT, May, 2007

Symposium: "Cellular Responses to Environmental Changes: Genomics, DNA Rearrangements
and Signal Transduction, Scripps Institute, San Diego, CA, May, 2007

Advanced Bacterial Genetics course, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY,
June 2007

Department of Biochemistry and Molecular Biology, University of Miami School of Medicine,
Miami, FL, August, 2007

"Lambda Lunch", Laboratory of Molecular Biology, National Cancer Institute, NIH, Bethesda,
MD, September, 2007

Department of Microbiology and Molecular Genetics, Harvard Medical School, Boston, MA,
September, 2007

140. Department of Microbiology, University of Iowa, Iowa City, IA, September, 2007

Department of Molecular Genetics & Microbiology, University of Texas, Austin, TX, October,
2007

Genetics training grant invited speaker, Department of Microbiology , Immunology & Molecular
Genetics, UCLA, Los Angeles, CA, November, 2007

Division of Biological Science, Nagoya University, Nagoya, Japan, December, 2007

Department of Frontier Bioscience, Hosei University, Tokyo, Japan, December, 2007

Gordon Conference: "Signal Transduction in Microorganisms", Ventura, CA, January, 2008

Department of Microbiology & Immunology, University of North Dakota, Grand Forks, ND,
March, 2008

Department of Microbiology, University of Geneva, Geneva, Switzerland, April, 2008

Unité de Génétique moléculaire, Pasteur Institute, Paris, France, April, 2008

Centre de Génétique Moléculaire, CNRS, Gif-sur-Yvette, France, April, 2008

150. Division J Lecture, American Society for Microbiology, General meeting, Boston, MA,
June 2008

Advanced Bacterial Genetics course, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, June 2008

Cold Spring Harbor Phage meeting, invited speaker, CSH, NY, August 2008

Interdisciplinary Biochemistry Graduate Program, Indiana University, Bloomington, IN, September, 2008

Departamento de Genética, Universidad de Sevilla, Sevilla, Spain, October 2008

Laboratoire de Microbiologie et Génétique Moléculaires, CNRS, Toulouse, France, October 2008

Institut de Biologie Structurale et Microbiologie, Campus CNRS, Marseilles, France, October 2008

EMBO meeting: Control, Co-ordination and Regulation of Protein Targeting and Translocation, Ste. Maxime, France, October 2008

Department of Molecular Microbiology, Washington University, St. Louis, MO, November 2008

Asian Science Seminar 2008 "Genome Regulation: From Nanobiology to Pathogenesis", Bangalore, India, December 2008

160. Biological Sciences Division, University of Chicago, Chicago, IL, February 2009

Advanced Bacterial Genetics course, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, June 2009

Institute of Genetics and Human Development, Université Rennes, September 2009

Fakultät fuer Biologie, Universität Konstanz, Konstanz, Germany, September, 2009

3rd ASM Conference on Salmonella: Biology, Pathogenesis & Prevention. Aix-en-Provence, October 2009

Max Planck Institute, Stuttgart, Germany, January 2010

Marine Biology Institute, University of Philippines, Quezon City, Philippines, January 2010

Department of Biochemistry, University of Virginia, April, 2010

Max Planck Institute, Tuebingen, Germany, May, 2010

Forum of Graduate schools; Infection & Immunity and Biology & Medicine, Geneva, June, 2010

170. 2010 Bacterial Networks Meeting, Barcelona, Spain, September, 2010

1st Retreat of the Geneva Bacteriology, Les Diablerets, Switzerland, October, 2010

Molecular Motors Workshop, University of Heidelberg, Germany, November, 2010

Global Health Institute, EPFL, Lausanne, Switzerland, April, 2011

Institute of Microbiology, ETH, Zurich, Switzerland, April, 2011

Molecular Microbiology Meeting, Institute for Molecular Infection Biology, University of Würzburg, Germany, May 2011

International Union of Microbial Societies 2011 Congress, Sapporo, Japan, September 2011

Department of Molecular Biology & Microbiology, Case Western Reserve University,
Cleveland, OH, October 2011

Advanced Bacterial Genetics course, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY,
June 2012

Department of Microbiology, University of Washington, Seattle, WA, October 2012

180. Marine Science Institute, University of the Philippines, June, 2013

Stan Maloy 60th Anniversary Symposium, San Diego State University, CA, September 2013

Department of Pathology & Laboratory Medicine, University of Texas Medical School at
Houston, Houston, TX, April 2013

Genetic Interest Group Seminar Series, University of Utah, January 2014

Science Night Live, College of Science University of Utah, January 2014

19th Flagellar meeting, Prefectural University of Hiroshima, Japan, March 2014

Okinawa Institute of Science & Technology, Japan, March 2014

DNA Transactions Meeting, Oléron, France, September 2014

Helmholtz Institute for Infection Biology, Braunschweig, Germany, September 2014

Max Plank Institute for Terrestrial Microbiology, Marburg, Germany, September 2014

190. Department of Biology, University of Namur, Namur, Belgium, September 2014

Faculty of Bioscience Engineering, KU University of Leuven, Leuven, Belgium, September
2014

Department of Microbiology & Molecular Genetics, University of California, Irvine, CA, April
2015

Keynote Speaker: Southwest Virginia Microbiology Meeting, Virginia Bioinformatics Institute
and Life Sciences I, Virginia Tech, Blacksburg, VA, April 2015

70th Anniversary of the Phage Course Symposium, Cold Spring Harbor Laboratories, Cold
Spring Harbor, NY, June 2015

FASEB Summer Research Conference “Transcription Initiation in Prokaryotes”, June 2015

Department of Life Sciences, Imperial College, London, United Kingdom, July 2015

Department of Physics, University of Oxford, Oxford, United Kingdom, July 2015

Division of Genetic Epidemiology, University of Utah, Salt Lake City, UT, August 2015

Department of Biochemistry & Biophysics, University of California, San Francisco, CA, March
2016

200. Fakultät fuer Biologie, Universität Konstanz, Konstanz, Germany, March 2016

Type III Secretion Systems 2016, Tübingen, Germany, April 2016

Institute of Biology, Leiden University, Holland, April 2016

Advanced Bacterial Genetics course, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, June 2016

Annual Meeting, American Society for Microbiology, Boston, MA, June 2016

Gordon Research Conference on Bacterial Cell Surfaces, June 2016

Gordon Research Conference on Microbial Stress Response, July 2016

Bacterial Flagella & Type III Secretion Systems. Okinawa Institute of Science & Technology, Japan, March, 2017

Department of Physics, University of Oxford, Oxford, United Kingdom, July 2017

"Lambda Lunch", Laboratory of Molecular Biology, National Cancer Institute, NIH, Bethesda, MD, July, 2017

210. Department of Genetics, Universidad de Sevilla, Spain, September 2017

Department of Biological Sciences, Columbia University, New York, NY, October 2017

Gordon Research Conference: Signal Transduction in Microorganisms, Ventura, CA, January 2018

Division of Bacterial, Parasitic, and Allergenic Products, FDA, Silver Springs, MD, February 2018

ASM Microbe Annual meeting, Atlanta, GA, June 2018

Department of Microbiology, Trinity College, Dublin, Ireland, July 2018

Evolutionary Biology meeting, Marseilles, France, September 2018

Institut de Microbiologie de la Méditerranée, CNRS, Marseilles, France, September 2018

Bacterial Protein Export meeting, Leuven, Belgium, September, 2018

Department of Biological Sciences, University of Idaho, Moscow, ID, October 2018

Bacterial Locomotion and Signal Transduction (BLAST XV) Meeting, New Orleans, LA, January 2019

Department of Microbiology & Molecular Biology, BYU, Provo, UT, September 2019

Gordon Conference: "Signal Transduction in Microorganisms", Ventura, CA, January, 2020

Topics in Biology Course on Microbes in Health and Disease, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, February 2020

International Workshop on Bacterial Flagella and BioMachinaries, Taipei, Taiwan, March 2020 (cancelled due to Covid19)

75th Anniversary of the Phage Course Symposium, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, June 2020 (cancelled due to Covid19)

ASM Microbe annual meeting, Chicago, IL, June 2020 (cancelled due to Covid19)

UC Davis John Roth retirement symposium, October 2020 (cancelled due to Covid19)

"Lambda Lunch", Laboratory of Molecular Biology, National Cancer Institute, NIH, Bethesda, MD, April, 2021

Gordon Research Conference: Signal Transduction in Microorganisms, Ventura, CA, January 2022 (postponed to August 2022 due to the Covid19 omicron variant surge)