

CURRICULUM VITAE

12/17

EDWARD A. BIRGE

Associate Professor of Microbiology

Year of Appointment: 1972

Degrees:

B.A. 1965 University of Wisconsin, Madison

Ph.D. 1971 University of Wisconsin, Madison

Area of Specialization: Bacterial and molecular genetics

Academic Experience:

September 2004- Adjunct Biology faculty member Yakima Valley Community College
April 2012

July, 1991-2003 Chair, Department of Microbiology, Arizona State University

Fall, 1989- Director of Graduate Studies, Department of Microbiology, Arizona
June, 1990 State University

Fall, 1986 Acting director, Microbiology Program, Arizona State University

Spring 1982 Department of Bacteriology, University of Wisconsin, Madison. Visiting
Associate Professor.

1977- 2004 Department of Botany and Microbiology, Arizona State University. Associate
Professor of Microbiology.

1974-77 Director, Microbiology Program, Arizona State University.

1972-77 Department of Botany and Microbiology, Assistant Professor of
Microbiology.

1971-72 Radiobiology Laboratory, Yale University Medical School, New Haven. NIH
Postdoctoral Fellow.

1970-71 Radiobiology Laboratory, Yale University Medical School, New Haven. NIH
Postdoctoral Trainee.

1966-70 Department of Zoology, University of Wisconsin, Madison. Research

Assistant and Predoctoral Fellow.

1964-66 Department of Zoology, University of Wisconsin, Madison. Teaching Assistant.

International Meetings Attended:

1978 XIV International Congress of Genetics, Moscow
 1973 XIII International Congress of Genetics, Berkeley
 1968 VI International Congress of Chemotherapy, Tokyo

Sabbatical Leave

1988 C.E.R.I.A., Brussels, Belgium (six month tenure)

Professional Organizations:

AAAS
 American Society for Microbiology
 Arizona Branch of the American Society for Microbiology (Secretary-Treasurer, 1983-1987, 1990- 2003)

Grants Received:

1989, 1990 Arizona State University, College of Liberal Arts and Sciences, "Fatty Acid Transport in Isocitrate Dehydrogenase Mutants." \$500
 1984 Arizona State University Biomedical Research. "Genetics of Isocitrate Dehydrogenase in *E. coli*." \$1800
 1979-80 Arizona State University Grants Committee. "Light Source for Examination of DNA Gels." \$600
 1976-78 N.S.F. Undergraduate Scientific Equipment. Project director. \$7400
 1975-77 N.I.H. "Analysis of Recombinationless Mutants of Bacteria." \$54,669
 1974 Arizona State University Grants Committee. "Inviabile DNA Structures and Recombination in *E. coli*." \$1550
 Arizona State University Faculty Research Program. "Characterization of a New Rec⁻ Mutation in *E. coli*." \$2000
 1973 Arizona State University Grants Committee. "Genetic Characterization of

Recombination in *E. coli*." \$1800

Ad Hoc Reviewer for the following organizations:

Academic Press
Journal of Theoretical Biology
Current Microbiology
Holden-Day Publishers
Springer-Verlag
National Science Foundation (GRFP panel member, 1999, 2000, 2001; Panel Leader 2002)

Courses Taught Since Initial Employment

Arizona State University

MIC 205 Microbiology (1972-74; summers 1982-86)
MIC 206 Microbiology laboratory (1972-74; summers 1982-88)
MIC 220 General Bacteriology (1975- 2003)
MIC 302 Advanced Bacteriology Laboratory (1975-2003)
MIC 440 Bacterial Genetics (1972)
MIC 441 Bacterial Genetics (1973-2003)
MIC 442 Bacterial Genetics Lab (1973-2003)
MIC 498 Introduction to Molecular Genetics (Summers 1974-75)
MIC 498 Plant-Bacterial Metabolism (3 times since 1996, joint with Ken Hooper from Plant Biology)
MIC 591 Bacterial Genetics Seminar (every semester except spring 1982)
BIO 591 Biology for secondary teachers (one week, summer 1984).
Lecture for secondary science research students, summer 1984.

University of Wisconsin, Madison

BAC 375 Microbial Genetics

Honors:

Named to the Outstanding Teacher Honor Roll by POINT magazine, September 1980.

Certificate of appreciation from Disabled Student Resources, Arizona State University; April, 1985.

Nominated for CLAS teaching award, March, 2000.

Faculty Senator: September 1984-91

Present Committee Service:

Department: Library Representative, Computer Committee

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College: Dean's Academic Council

University: Biosafety (Chair 1984-86)

Previous Committee Service:

Department: Capital Budget, Personnel, Seminar, Faculty Search Committees (7, 3 as chair).

College: Ad hoc Committee to Study the Honors Program, Honors Council, Ad hoc Research Awards Committee, Research Awards Committee, Liberal Arts Council (chair 1980-81), EM director search committee.

University: Faculty Grant-in-Aid, biohazard, member of search committee for biology subject specialist for Noble Library (3 times), Student Policy Committee, (Chair 1986), Faculty Senate Executive Committee, President's Consultative Committee, Fulbright-Hays Advisory Committee, Steering Committee member for Academic Chairs and Directors Group (6 years, chair for last two years)

Regents: Committee on goals for high school science instruction
Faculty ambassadors program to Carl Hayden, Paradise Valley, Queen Creek, Chandler, Payson, Springerville, Bullhead City and Clifton High Schools.

Service to the Community:

Volunteer reader for Recording for the Blind and Dyslexic, Inc. (1972-)

9 gallon blood donor (no longer active)

Career Day Presentations

Rover School

Supai Middle School

Moon Valley High School

Shadow Mountain High School

Judge of microbiology exhibits for the central Arizona science fair (most years)

Homeowners association board member (2001-)

Moderator, Desert Palm United Church of Christ (1998-99)

Invited speaker:

MENSA 1990 Convention in Phoenix

Scottsdale Rotary Club, 1999

Radio appearances: Earl Baldwin Show (twice)

PUBLICATIONS

Textbooks

Bacterial and Bacteriophage Genetics: An Introduction. Fifth Edition. New York, Springer-Verlag. 2006. 577 pp.

Bacterial and Bacteriophage Genetics: An Introduction. Fourth Edition. New York, Springer-Verlag. 2000. 559 pp.

Bacterial and Bacteriophage Genetics: An Introduction. Third Edition. New York, Springer-Verlag. 1994. 442 pp.

Modern Microbiology: Principles and Applications. William C. Brown Co., Inc. 1992. 465 pages.

Bacterial and Bacteriophage Genetics: An Introduction. Second Edition. New York, Springer-Verlag. 1988. 400 pp.

Bakterien- und Phagengenetik. Eine Einfuhrung. German translation by H. Matzura and E. Zyprian. Berlin, Springer-Verlag. 1984. 311 pp.

Bacterial and Bacteriophage Genetics: An Introduction. New York, Springer-Verlag. 1981. 359 pp.; Corrected second printing 1983.

Book Reviews

Birge, Edward A. (1996). An author's vade-mecum. *Getting into Print: A Guide for Scientists and Technologists*, by Peter Sprent. *Trends in Biochemical Sciences* 21:118.

Referred Journal Articles

"Location of *icdA* and *fadR* on the physical map of *Escherichia coli*." C. Herold., E. A. Birge. *Journal of Bacteriology* 172: 6618 (1990).

"Characterization of bacteriophage 18, an unstable coliphage." V. Bess and E.A. Birge. *Virology* 156:122-126 (1987).

"Isocitrate dehydrogenase assays on intact bacterial cells." L.G. Pearce, H.C. Reeves, and E.A. Birge. *Analytical Biochemistry* 147:194-197 (1985).

"Site-specific recombination following conjugation in *Escherichia coli* K-12." E.A. Birge. *Molecular and General Genetics* 192:366-372 (1983).

"Genetic map position of the cistron coding for isocitrate dehydrogenase in *Escherichia coli* K-12." D Apostolakos, P.A. Menter, B.J. Rampsch, H.C. Reeves, and E.A. Birge, *Current Microbiology* 7:45-47 (1982)

"The use of nitrocellulose filters to study DNA binding proteins in crude cell lysates: effect of competing DNA." D.J. Lye and E.A. Birge, *Current Microbiology* 6:139-143 (1981)

"A thermosensitive *pdxJ* mutation affecting vitamin B₆ biosynthesis in *Escherichia coli* K-12." D. Apostolakos and E.A. Birge, *Current Microbiology* 2:39-42 (1979)

"Stimulation of conjugal recombinant production in *recB*⁻ cells by the subsequent introduction of *recB*⁺ genes." E.A. Birge, *Molecular and General Genetics* 137:203-210 (1975)

"Detection of transcribable recombination products following conjugation in *Rec*⁺, *RecB*⁻ and *RecC*⁻ strains of *Escherichia coli* K-12." E.A. Birge and K.B. Low, *Journal of Molecular Biology* 83:447-457 (1974)

"Correlation of 305 ribosomal proteins of *Escherichia coli* isolated in different laboratories." H.G. Wittman, G. Stoffler, I. Hindennach, C.G. Kurland, L. Randall Hazelbauer, E.A. Birge, M. Nomura, E. Kaltschmidt, S. Mizushima, R.R. Traut, and T.A. Bickel, *Molecular and General Genetics* 111:327-333 (1971)

"Reversion of a streptomycin-dependent strain of *Escherichia coli*." E.A. Birge and C.G. Kurland, *Molecular and General Genetics* 109:356-369 (1970)

"Altered ribosomal protein in streptomycin-dependent *Escherichia coli*." E.A. Birge and C.G. Kurland, *Science* 166:1281-1284 (1969)

"K locus: structural determinant of a ribosomal protein." E.A. Birge, G.R. Craven, S.J.S. Hardy, C.G. Kurland and P. Voynow, *Science* 164:1285-1286 (1969)

Abstracts Presented at National and International Meetings

"Optimized electroporation conditions for *Bacillus sphaericus* 2362". S. Kelly and E. Birge. Abstracts of the General Meeting of the American Society for Microbiology (1996) p. 395.

"Donor DNA incorporated into *Escherichia coli* transconjugants can occur as short or long segments, depending on the life strain employed". E. Birge. Abstracts of the General Meeting of the American Society for Microbiology (1994) p. 243.

"Defective acetate and oleate transport in an isocitrate dehydrogenase mutant of *Escherichia coli*." E. Vanderwinkle and E.A. Birge. Abstracts of the General Meeting of the American Society for Microbiology (1989) p.248.

"Transcriptional regulation of isocitrate dehydrogenase by oxygen." K.D. Kvistberg and E.A. Birge. Abstracts of the General Meeting of the American Society for Microbiology (1987) p. 151.

"Characterization of phage 18." V. Bess and E.A. Birge. Abstracts of the Annual Meeting of the American Society for Microbiology, (1986).

"Hotspot for recombination following conjugation in *Escherichia coli*." R.D. Piott and E.A. Birge, Abstracts of the Annual Meeting of the American Society for Microbiology, (1985).

"A novel method for rapid electrophoresis of plasmids from *Bacillus megaterium*." M. Puglia and E.A. Birge, Abstracts of the Annual Meeting of the American Society for Microbiology, (1985).

"Characterization of a mutation affecting production of isocitrate dehydrogenase in *Escherichia coli*." L.G. Pearce and E.A. Birge, Abstracts of the Annual Meeting of the American Society for Microbiology, p. 122 (1983).

"Preliminary characterization of a P1-derived bacteriophage." C.J. Coffin and E.A. Birge, Abstracts of the Annual Meeting of the American Society for Microbiology, p. 129 (1982).

"DNA-binding patterns of lysates of *E. coli* following conjugation." D.J. Lye and E.A. Birge, Abstracts of the Annual Meeting of the American Society for Microbiology, p. 114 (1980).

"DNA-binding proteins isolated from cells of *E. coli* undergoing conjugation." D.J. Lye and E.A. Birge, Abstracts of the Annual Meeting of the American Society for Microbiology, p. 123 (1979).

"Stimulated protein production in F⁻ cells of *Escherichia coli* undergoing conjugation." D.J. Lye and E.A. Birge. Abstracts of the XIV International Congress of Genetics Part 1 p. 234 (1978).

"Characterization of a novel temperature-sensitive vitamin B₆ auxotroph of *Escherichia coli* K-12." D. Apostolakos and E.A. Birge, Abstracts of the Annual Meeting of the American Society for Microbiology, p. 115 (1978).

"A novel genetic alteration occurring within the lactose operon of *Escherichia coli* K-12." P.

Hicock and E.A. Birge, *Genetics* 83:s32 (1976).

"Characterization of a new recombination deficiency mutation in *Escherichia coli* K-12. C. Pelley and E.A. Birge, *Abstracts of the Annual Meeting of the American Society for Microbiology*, p. 105 (1976).

"Mutations associated with nalidixic acid resistance and their relationship to antibiotic resistance mutation affecting fidelity of translation in *E. coli* KL98." B.J. Rampsch and E.A. Birge, *Genetics* 80:s66 (1975).

"Increased recombinant colony production in mated *rec*⁻ strains of *Escherichia coli* following the addition of an episome carrying the corresponding *rec*⁺ gene." E.A. Birge, *Genetics* 74:s24 (1973).

Invited Chapters

"Molecular Biology" - an article prepared for the *Encyclopedia of Physics*, third edition, edited by R.M. Besancon. Van Nostrand: New York. 1985.

"Molecular interaction between ribosomal components." C.G. Kurland, M. Green, H.W. Shaup, D. Donner, L. Lutter, and E.A. Birge. In: Cox, R.A., Hadjiolov, A.A. (eds.) *Functional Units in Protein Biosynthesis*. Academic Press: New York. 1972.

"Genetic studies of ribosomal proteins." E.A. Birge and C.G. Kurland. *Progress in Antimicrobial and Anticancer Chemotherapy*, Vol. II, pp. 452-455. The University of Tokyo Press: Tokyo. 1969.

Graduate Students

Completed

Chiquita Rollins (M.S. 1975) Later received Ph.D. from University of Oregon. Now an administrator in the Multnomah County Oregon Family Services Department

Paul Hicock (M.S.) Associate Professor of Clinical Laboratory Sciences, University of Mississippi Medical Center

Diane Apostolakos (M.S.) Preparing for residency after completing medical program at the University of Guadalajara

Dennis Lye (Ph.D. 1980) Associate Professor at University of Northern Kentucky.

Candace Coffin (Ph.D. 1982) Presently a Professor at Briar Cliff College, Sioux City, Iowa

Lori Pearce (M.S. 1983) Teaching 5th and 6th grade science for Phoenix Elementary School District

Ray Piott (M.S.) Present status unknown

Vicki Bess (M.S. 1985) Proprietor, BBC Labs, Tempe

Karl Kvistberg (Ph.D. 1987) Faculty member at Nicolet Technical College in Rhinelander, WI

Gary Cage (M.S. 1991) Arizona State Health Department Laboratory

Mary Puglia (Ph.D. 2000) Professor, Central Arizona College

John Wertz (Ph.D. 2000) Postdoctoral fellow, Department of Biology, Yale University

Recent Graduate Committee Service

Tanya Thal, M.S. (1993)

Andrew Kloser, Ph.D. (1995)

Arleen Lopez Torres, Ph.D. (1995)

Kim Weeks, M.S. (1995)

Jack Deeter, M.S. (1996)

Geeta Gupte, Ph.D. (1996)

Michael Laird, Ph.D. (1996)

Daniel Fajardo, Ph.D. (1997)

Hema Vakharia, Ph.D. (1999)

Trella Mitchell, Ph.D. (1999)

Jay Prendergast, M.N.S. (1999)

Cherie Martina, M.S. (2000)

John Sollenberger M.N.S. (2001)

Honors Students

Completed a senior honors thesis

Brian Rampsch -

Mary Ellen Dirlam

George Davis