Gregory P. Krukonis
Curriculum Vitae

Assistant Professor, Department of Biology, Angelo State University, San Angelo, TX 76904
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Education

1984 A.B. University of Pennsylvania, Biology
1994 Ph.D. University of Arizona, Department of Ecology and Evolutionary Biology - "Diversity of naturally occurring bacteriophages of *Bacillus subtilis* and their interactions with their hosts" (Conrad Istock, Advisor).

Employment

2017-Present Assistant Professor, Department of Biology, Angelo State University
2015-2016 Visiting Assistant Professor, Department of Biology, Bucknell University
2009-2015 Visiting Assistant Professor, Department of Biology, Gettysburg College
2008 Spring Adjunct Assistant Professor, Department of Biology, Lewis and Clark College
2004 Fall Adjunct Assistant Professor, Department of Biology, Lewis and Clark College
2003-2009 Consultant -- Microbiological Process Evaluation, Bioinformatics, Experimental Design, Statistical Analysis, Business Development
2002-2003 Postdoctoral Research Associate, Department of Biology, Stanford University
1995-2002 Postdoctoral Research Associate, Department of Biology, Wesleyan University

Support

NSF Research Training Grant for the Study of Biological Diversification Fellowship Spring 1993, $5950
NSF Research Training Grant for the Study of Biological Diversification Fellowship Fall 1993, $5950
NSF Population Biology, with Frederick M. Cohan, Evolutionary Adaptation in Viruses: The Role of Recombination 1999 $265,797
Professional Development Fund, Faculty Development Committee, Gettysburg College 2009 $3000
Professional Development Fund, Faculty Development Committee, Gettysburg College 2010 $4988
Professional Development Fund, Faculty Development Committee, Gettysburg College 2010 $4990 – Joint proposal with Véronique Delesalle
Professional Development Fund, Faculty Development Committee, Gettysburg College 2014 $7500 – Joint proposal with Véronique Delesalle

Teaching experience

Lewis and Clark College:
Fall 04: Ecology, Evolution, and Molecular Biology of Viruses - 400-level course for Biology and Biochemistry majors
Spring 08: Perspectives in Biology - 100-level course for non-majors with a molecular focus

Gettysburg College:
Spring 09: Genetics (lecture and two laboratory sections) – 200-level course for Biology and Biochemistry/Molecular Biology majors

Fall Page 2 of 609: Introduction to Cells and Molecules - 100-level course for non-majors; Cell Biology laboratories (two sections) associated with 200-level course
Spring 10: Ecology, Evolution, and Molecular Biology of Viruses - 300-level course for Biology and BMB majors; Genetics laboratory associated with 200-level course
Fall 10: Introduction to Cells and Molecules - 100-level course for non-majors; Genetics laboratories (two sections) associated with 200-level course
Spring 11: Ecology, Evolution, and Molecular Biology of Viruses - 300-level course for Biology and BMB majors; Genetics laboratory associated with 200-level course
Fall 11: Introduction to Cells and Molecules (Bio 110); Introduction to Phage Biology (Bio 113)
Spring 12: Phage Genomics (Bio 114); Biological Basis of Diseases (Bio 102; course for non-science majors)
Fall 12: Introduction to Phage Biology (Bio 113); Ecology, Evolution, and Molecular Biology of Viruses (Bio 390)
Spring 13: Phage Genomics (Bio 114); Biological Basis of Diseases (Bio 102; course for non-science majors)
Fall 13: Introduction to Phage Biology (Bio 113); Ecology, Evolution, and Molecular Biology of Viruses (Bio 390)
Spring 14: Phage Genomics (Bio 114); Biological Basis of Diseases (Bio 102; course for non-science majors); Genetics laboratory (one section) associated with 200-level course
Fall 14: Introduction to Phage Biology (Bio 113); Evolutionary Medicine (Bio 361)
Spring 15: Phage Genomics (Bio 114); Genetics laboratory (two sections) associated with 200-level course

Bucknell University:
Fall 15: Genetics (a sophomore level course; two lecture sections)
Spring 16: Phage Hunters 2 (a sophomore level course); Molecular Biology (a sophomore/junior level course)

Research Interests

Ecology and evolution of naturally occurring microbial communities; spatial and temporal scales for species interactions, particularly phages and soil *Bacillus* species; ecology and genetics of phage host range; evolutionary mechanisms for the origin and maintenance of species diversity; evolution of defenses by bacteria

Supervised Independent Research at Gettysburg College (Bio 453 – Tutorial; Bio 460 – Independent research):

Fall 10 – Bio 453; Spring 11 – Bio 460: Casey Lumpkin and Maggie Ewen
Fall 11 – Bio 453; Spring 12 – Bio 460: Kendra Hayden
Summer 12; Spring 2013: Christina Cochran ‘ 13
Spring 13 – Bio 460: Alice Kraiza’13
Summer 13 – Katherine Boas ’16; Stacey Heaver ’15; Aden Lessiak ’15; Brianne Tomko ‘16
Summer 14 - Katherine Boas ’16; Stacey Heaver ’15; Brianne Tomko ’16; Albert Vill ’16; Celina Harris ’17; Natalie Tanke ‘17
Fall 14 – Bio 453: Stacey Heaver’15
Spring 15- Bio 460: Stacey Heaver’15; Bio 453: Albert Vill ’16; Natalie Tanke ’17
Summer 15 – Alexandra Agesen ’18; Katherine Boas ’16; Madison Strine ’18; Brianne Tomko ’16; Albert Vill ’16

Co-advising Independent Research at Gettysburg College

Fall 15-Spring 16 – Bio 453: Elizabeth Burton ’18; Natalie Tanke ’17 - Bio 460: Katherine Boas ’16; Brianne Tomko ’16; Albert Vill ’16
Summer 16 - Alexandra Agesen ’18; Katherine Boas ’16; Jenna DeCurzio ‘ 18; Rebecca King ’19; Madison Strine ’18

Summer 17 - Jenna DeCurzio ‘ 18; Madison Strine ’18; Rachel Loney ’20; Marana Tso ’20; Holly Wentworth ‘20

Publications (* = undergraduate student author)

Delesalle, V.A., N.T. Tanke*, A.C. Vill*, and G.P. Krukonis. 2016. Testing hypotheses for the presence of tRNA genes in mycobacteriophage genomes. Bacteriophage, 6:3, e1219441 DOI: 10.1080/21597081.2016.1219441.

Cresawn, S.G. et al., 2015. Comparative Genomics of Cluster O mycobacteriophages. PLoS One 10(3): e0118725.

Pope, W.H. et al., 2014. Cluster M mycobacteriophages Bongo, PegLeg, and Rey with unusually large repertoires of tRNA isotypes. Journal of Virology 88:2461-2480.

Krukonis, Greg and Tracy Barr. 2008. Evolution For Dummies. Wiley Publishing Inc, Indianapolis. (has subsequently been translated in Dutch and German)

Sacks, F. M. and Krukonis, G. P. 1996. The influence of apolipoprotein E on the interactions between normal human very low density lipoproteins and U937 human macrophages: heterogeneity among persons. Vascular Medicine. 1:9-18

Krukonis, G. P. and W. M. Schaffer. 1991. Population cycles in mammals and birds: does periodicity scale with body size? Jour. Theor. Biol. 148:469-493.

Krukonis, G. P. and S. Schwinning. 1990. Review of Perspectives in Ecological Theory (J. Rougharden, R. M. May and S. A. Levin) Bull. Math. Biol. 52:705-6.

Publication/manuscript as contributing author/member of the Science Education Alliance Phage Hunters Advancing Genomics and Evolutionary Science - SEA-PHAGES

Pope, W.H. et al. Whole genome comparison of a large collection of mycobacteriophages reveals a continuum of phage genetic diversity. Published in eLIFE. 2015 Apr 28;4. doi: 10.7554/eLife.06416.

Hanauer, D.I. et al. An Inclusive Research-Education Community (iREC): A model for student engagement in science. Tentatively accepted to *Science Advances* pending minor revisions.

Manuscripts submitted (* = undergraduate student author)

Manuscripts in preparation (* = undergraduate student author)

Tomko*, B., A. Agesen*, K. Boas*, M. Strine*, A. Vill*, V.A. Delesalle and G.P. Krukonis. Genomic characterization of newly Isolated SPP1-like *Bacillus* phages and their host-range mutants.

Vill*, A.C., A. Agesen*, K. Boas*, E. Burton*, M. Strine*, N.T. Tanke*, B. Tomko*, V.A. Delesalle, and G.P. Krukonis Comparative genetic analyses of six novel phages that differentially lyse strains of *Bacillus subtilis.*

Published/submitted genome announcements

Hatfull, G. F., Science Education Alliance Phage Hunters Advancing Genomics and Evolutionary Science (SEA-PHAGES) program, KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH) Mycobacterial Genetics Course, University of California Los Angeles Research Immersion Laboratory in Virology, Phage Hunters Integrating Research and Education (PHIRE)

program. 2013. The complete genome sequences of 63 mycobacteriophages. Genome Announcements 1(6): e00847-13.

Bollivar, D., Bernardoni, B., Bockman. M., Miller. B., Russell, D., Delesalle, V., Krukonis, G., Hatfull, G., Cross, M., Szewczyk, M. and A. Eppurath. 2016. The complete genome sequence of five bacteriophages that infect *Rhodobacter capsulatus*. Genome Announcements 4(3): e00051-16. doi:10.1128/genomeA.00051-16.

Genome annotation Co-author of the following genome annotations submitted to GenBank (NCBI)

Phage	Host	Accession #
Spartacus	*Mycobacterium smegmatis*	JQ300538.1
Avani	*Mycobacterium smegmatis*	JQ809702.1
Melvin	*Mycobacterium smegmatis*	KF841476
BellusTerra	*Mycobacterium smegmatis*	KF841475.1
Tiffany	*Mycobacterium smegmatis*	KM101119.1
Phamished	*Mycobacterium smegmatis*	KR816508
Kimberlium	*Mycobacterium smegmatis*	KR935214
Cronus	*Rhodobacter capsulatus*	KR935217
Titan	*Rhodobacter capsulatus*	KR935213
Rhea	*Rhodobacter capsulatus*	KR935216
Spartan	*Rhodobacter capsulatus*	KR935215
Saxon	*Rhodobacter capsulatus*	KT253150

Invited presentations

2014 Lewis and Clark College, Portland, OR
2015 Suffolk University, Boston, MA
Dickinson College, Carlisle, PA
Bucknell University, Lewisburg, PA
Denison College, Granville, OH
2016 Swarthmore College, Swarthmore, PA
University of Wisconsin at Stevens Point, Stevens Point, WI
Capital University, Columbus, OH
Shenandoah University, Winchester, VA
University of Detroit Mercy, Mercy, MI
Presbyterian College, Clinton, SC
Haverford College, Haverford, PA
2017 Doane College, Crete, NE
Angelo State University, San Angelo, TX
Benedictine University, Lisle, IL

Meeting Presentations

1992 Society for the Study of Evolution, Annual Meeting, Berkeley, CA
1993 Society for the Study of Evolution, Annual Meeting, Snowbird, UT
1993 Gordon Research Conference on Microbial Population Biology, Plymouth, NH
1994 Ecological Society of America, Annual Meeting, Knoxville, TN
1994 Society for the Study of Evolution, Annual Meeting, Athens, GA
1995 Gordon Research Conference on Microbial Population Biology, Plymouth, NH
1995 Society for the Study of Evolution, Annual Meeting, Montreal, Quebec

1995 Ecological Society of America, Annual Meeting, Snowbird, UT
1996 Ecological Society of America, Annual Meeting, Providence, RI
1996 Society for the Study of Evolution, Annual Meeting, St. Louis, MO
1997 Ecological Society of America, Annual Meeting, Albuquerque, NM
1997 Society for the Study of Evolution, Annual Meeting, Boulder, CO
1998 Ecological Society of America, Annual Meeting, Baltimore, MD
1998 Society for the Study of Evolution, Annual Meeting, Vancouver, BC
1999 Gordon Research Conference on Microbial Population Biology, Plymouth, NH
1999 Ecological Society of America, Annual Meeting, Spokane, WA
2000 Society for the Study of Evolution, Annual Meeting, Bloomington, IN
2000 Ecological Society of America, Annual Meeting, Snowbird, UT
2001 Society for the Study of Evolution, Annual Meeting, Knoxville, TN
2002 Society for the Study of Evolution, Annual Meeting, Champaign/Urbana, IL
2003 Society for the Study of Evolution, Annual Meeting, Chico, CA
2003 Gordon Research Conference on Microbial Population Biology, Andover, NH

Pedagogical presentations/posters

Delesalle, VA and GP Krukonis. A bridge for everyone: fostering community and the life of the mind with course based research experiences. Poster at the "Promoting Persistence and Success: Adapting Promising Practices and Promoting Institutional Change" Poster at Inaugural Constellation Studio, June 8-10, 2015, HHMI Headquarters, Chevy Chase, MD.

Other research presentations/posters

Bollivar, DW et al. Isolation and genomic characterization of six new *Rhodobacter capsulatus* bacteriophages. Poster at 15th International Symposium on Phototrophic Prokaryotes.

Student presentations at meetings (student presenter underlined; * = undergraduate co-author)

2012. 4th Annual SEA-PHAGES Symposium. Chad Killen'15 presented poster.
2013. 5th Annual SEA-PHAGES Symposium. Aden Lessiak'15 and Albert Vill'16 each presented a poster.
2014. 6th Annual SEA-PHAGES Symposium. Celina Harris'17 and Natalie Tanke'17 gave an oral presentation and presented a poster.
2015. 7th Annual SEA-PHAGES Symposium. Alexandra Agesen'18 and Madison Strine'18 gave a poster presentation.
2016. 8th Annual SEA-PHAGES Symposium (June 10-12). Lauren Otto and Lisa Francomacaro will be presenting a poster.

Society for the Study of Evolution, Austin, TX (June 17-22). Alexandra Agesen, Katherine Boas'16, Madison Strine'18, Natalie Tanke'17, Brianne Tomko'16, and Albert Vill'16 presented the following five posters:

1. Boas* K., A. Agesen*, M. Strine*, B. Tomko*, A.C. Vill*, V.A. Delesalle and G.P. Krukonis. Genotypic and phenotypic variation in space and time of naturally occurring *Bacillus* bacteriophage communities.
2. Agesen*, A., M. Strine*, S. Brantley*, K. Boas*, J. DeCurzio*, B. Tomko*, A.C. Vill*, R. Weisensee*, R. Wigmore*, V.A. Delesalle, and G.P. Krukonis. Comparative genomics of large phages of *Bacillus subtilis* that differ in tRNA genes and host range
3. Tanke,* N.T., A.C. Vill*, V.A. Delesalle, and G.P. Krukonis. Testing hypotheses for the presence of tRNA genes in mycobacteriophage genomes.
4. Tomko*, B., A. Agesen*, K. Boas*, M. Strine*, A. Vill*, V.A. Delesalle and G.P. Krukonis. Genomic characterization of newly isolated SPP1-like *Bacillus* phages and their host-range mutants.
5. Vill*, A.C., A. Agesen*, K. Boas*, E. Burton*, M. Strine*, N.T. Tanke*, B. Tomko*, V.A. Delesalle, and G.P. Krukonis. Comparative genetic analyses of six novel phages that differentially lyse strains of *Bacillus subtilis*

2017. Society for the Study of Evolution, Portland, OR (June 23-28). Alexandra Agesen'18, Jenna DeCurzio'18, Madison Strine'18, presented the following three posters:

1. Agesen* A., B. Tomko*, V.A. Delesalle, G.P. Krukonis. Analysis of host range mutants of *Bacillus subtilis* bacteriophages.
2. DeCurzio* J., V.A. Delesalle, R. King*, G.P. Krukonis, B. Koskella, and N. Morella. Comparative genomics of 19 small *Pseudomonas* bacteriophages.
3. Strine*, M., J. DeCurzio*, V.A Delesalle, G.P. Krukonis**.** Extracellular proteases: a potential Bacillus subtilis defense mechanism against bacteriophage infection?