

CURRICULUM VITAE**RINEHART, CLAIRE A.**

Department of Biology, Ogden College of Science & Engineering
 Western Kentucky University, Bowling Green, KY 42101
 270-745-6892 claire.rinehart@wku.edu

PROFESSIONAL PREPARATION

| | | | |
|---------------------------------|--------------|-------|-----------|
| Brigham Young University | Microbiology | BS | 1977 |
| Brigham Young University | Botany | M.S. | 1979 |
| University of Georgia | Botany | Ph.D. | 1984 |
| University of Wisconsin-Madison | Virology | | 1984-1988 |

PROFESSIONAL PREPARATION

Western Kentucky University; August 2008 – Present; Professor; Department of Biology

Western Kentucky University; August 1994 – 2008; Associate Professor; Department of Biology

Western Kentucky University; August 1988 – August 1994; Assistant Professor; Department of Biology

University of Wisconsin-Madison; January 1987 – August 1988; Research Associate; Institute for Molecular Virology

University of Wisconsin-Madison; January 1984 – January 1987; Postdoctoral Fellow; Institute for Molecular Virology

PRODUCTS**Publications** (in last five years) (* student authors)

- Pope WH, Bowman CA, Russell DA, Jacobs-Sera D, Asai DJ, Cresawn SG, Jacobs WR, Hendrix RW, Lawrence JG, Hatfull GF; Science Education Alliance Phage Hunters Advancing Genomics and Evolutionary Science*; Phage Hunters Integrating Research and Education; Mycobacterial Genetics Course. (2015) “Whole genome comparison of a large collection of mycobacteriophages reveals a continuum of phage genetic diversity.” *Elife*. 4:e06416. doi: 10.7554/eLife.06416.
- Pope W.H., Anders K.R., Baird M., Bowman C.A., Boyle M.M., Broussard G.W., Chow T., Clase K.L., Cooper S., Cornely K.A., Dejong R.J., Delesalle V.A., Deng L., Dunbar D., Edgington N.P., Ferreira C.M., Hafer K.W., Hartzog G.A., Hatherill J.R., Hughes L.E., Ipapo K., Krukonis G.P., Meier C.G., Monti D.L., Olm M.R., Page S.T., Peebles C.L., Rinehart C.A., Rubin M.R., Russell D.A., Sanders E.R., Schoer M., Shaffer C.D., Wherley J., Vazquez E., Yuan H., Zhang D., Cresawn S.G., Jacobs-Sera D., Hendrix R.W., Hatfull G.F. (2014) “Cluster M mycobacteriophages Bongo, PegLeg, and Rey with unusually large repertoires of tRNA isotypes.” *J. Virol.* 88:2461-80. doi: 10.1128/JVI.03363-13..
- *Forbes-Stoval, J., *Howton, J., Young, M., *Davis, G., *Chandler, T., Kessler, B., Rinehart, C.A., Jacobshagen, S. (2013) “Chlamydomonas reinhardtii strain CC-124 is highly sensitive to blue light in addition to green and red light in resetting its circadian clock, with the blue-light photoreceptor plant cryptochrome likely acting as negative

modulator.” *Plant Physiol Biochem.* 12;75C:14-23.

- *Kapadia, Chiraag, Rinehart, Claire A. (2013) “Ab Initio prediction of mycobacteriophages protein structure and function.” *BMC Bioinformatics* 14,(Suppl 17):A10.
- Van Rechem C., Black J.C., Abbas T., Allen A., Rinehart C.A., Yuan G.C., Dutta A., Whetstine J.R. (2011) “The SKP1-Cul1-F-box and leucine-rich repeat protein 4 (SCF-FbxL4) ubiquitin ligase regulates lysine demethylase 4A (KDM4A)/Jumonji domain-containing 2A (JMJD2A) protein.” *J Biol Chem.* 286:30462-70.
- Black, J.C., Allen, A., Van Rechem, C., Forbes, E., Longworth, M., Tschöp, K., Rinehart, C., Quiton, J., Walsh, R., Smallwood, A., Dyson, N.J., Whetstine, J.R. (2010) Conserved antagonism between JMJD2A/KDM4A and HP1 γ during cell cycle progression. *Mol Cell.* 40:736-48.

Other Significant Products. Direct Genome Submissions to GenBank. Peer-reviewed by the Pittsburgh Bacteriophage Institute. (* student authors)

- *Oates, E.A., *Brown, C.B., *McDaniel, C.M., *Wathen, K.E., *Thompson, A.R., *Goedde, M.A., Gaffney, B., Rinehart, C.A., King, R.A., Bowman, C.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. (2016) “*Arthrobacter* phage Mudcat, complete genome.” Mar. 5, 2016, GenBank: KU647628.
- *Lynch, K.C., *Doan, M., *Paisley, J.T., *Allen, K.G., Gaffney, B.L., Rinehart, C.A., King, R.A., Staples, A., Bowman, C.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. (2016) “*Arthrobacter* phage KellEzio, complete genome.” Mar. 5, 2016, GenBank: KU647626.
- *King, A.R., *Cook, R.C., *Khenner, E.M., *Owens, N.L., *Sharma, A., *Stairs, E.N., King, R.A., Rinehart, C.A., Serrano, M.G., Buck, G., Lee, V., Wang, Y., Carvalho, R., Voegtly, L., Shi, R., Duckworth, R., Johnson, A., Loviza, R., Walstead, R., Shah, Z., Kiflezghi, M., Wade, K., Anders, K.R., Braun, M.A., Delesalle, V.A., Hughes, L.E., Ware, V.C., Bradley, K.W., Barker, L.P., Asai, D.J., Bowman, C.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. (2016) “*Mycobacterium* phage Larenn, complete genome.” Jan. 5, 2016, GenBank: NC_028877.
- *Heard, W.N., *de Cesare, M.A., *Fan, L., *Herricks, S.E., *Hoffman, D.L., *Huggins, E.C., *Keeter, E.L., King, R.A., *McKellar, J.S., *Noel, E.M., *Pike, L.A., *Powers, N.A., *Profumo, K.M., *Pulsifer, E.A., Rinehart, C.A., Rowland, N.S., *White, A.J., *Wolford, L.E., Ball, S.L., Bradley, K.W., Asai, D.J., Bowman, C.A., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. (2016) “*Mycobacterium* phage TheloniousMonk, complete genome.” Jan. 5, 2016, GenBank: NC_028828.
- *Schrader, S.M., *Parthasarathy, P.T., King, R.A., Rinehart, C.A., Serrano, M.G., Lee, V., Hendricks, S.L., Sheth, N.U., Buck, G.A., Bradley, K.W., Khaja, R., Lewis, M.F., Barker, L.P., Jordan, T.C., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. (2011) “*Mycobacterium* phage TiroTheta9, complete genome.” Feb. 3, 2012, GenBank: JN561150.1.
- *Rice, B.G., *Bethi, A., *Calvert, L.E., *Coomer, C.A., *Eastes, A.N., *Eaton, E., *Faughn, J.D., *Gutierrez, A., *Gutierrez, A., *Hawtrey, S.F., *Jones, G.M., *Jones, M.L., *Kurlawala, Z.D., *Leet, T.A., *Lovell, L.J., *Phillips, K.E., *Shoup, L.E., *Stolze, A.C., *Walch, E.M., *Westerman, E.W., *Wheeler, M.A., *Wright, S.K., *Parthasarathy, P.T.,

King, R.A., Rinehart, C.A., Lee, V., Hendricks, S.L., Voegtly, L.J., Wang, Y., Glascock, A.L., Anderson, J., Williamson, S.M., Walstead, R.N., Carvalho, M.R.C., Johnson, A., Buck, G.A., Bradley, K.W., Khaja, R., Lewis, M.F., Barker, L.P., Jordan, T.C., Russell, D.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. "Mycobacterium phage BarrelRoll, complete genome." Feb. 3, **2012**, GenBank: JN643714.1.

- *Howard, C.M., Rinehart, C.A., *Parthasarathy, P.T., King, R.A., *Anyanwu, E.I., *Cole, K.G., *Driver, K.B., *Farnsworth, E.M., *Howard, B.G., *Howard, B.E., *Olberding, J.R., *Perkins, M.C., *Sayre, H.L., *Scaff, T.L., *Schradler, S.M., *Tope, C.A., Zhang, X., Meincke, L.J., Goodwin, L.A., Detter, J.C., Han, S., Green, L.D., Bradley, K.W., Khaja, R., Lewis, M.F., Barker, L.P., Jordan, T.C., Russell, D.A., Leuba, K.D., Fritz, M.J., Bowman, C.A., Pope, W.H., Jacobs-Sera, D., Hendrix, R.W. and Hatfull, G.F. "Mycobacterium phage Backyardigan, complete sequence." Feb. 3, **2012**, GenBank: JF704093.1
- Jacobs-Sera, D., Zellars, M., Wells, M.E., Webb, J.L., Ware, V.C., Vazquez, E., TamarapuParthasarathy, P., Smith, I.A., Simon, S.E., Shaffer, C.D., Rubin, M.R., Rosenzweig, R.F., Rinehart, C.A., Qin, H., Pillay, I., Payne, D.E. II, Padolina, J.M., Novick, P.A., Miller, E.S., Mayer, E.S., Marzillier, J.Y., Mageeney, C.M., MacGibeny, M.A., Li, W., Lee, J.Y., Kinnersley, M.A., King-Smith, C., King, R.A., Kenna, M.A., Kearsse, M.G., Johnson, B.K., Johnson, A.A., Johnson, C.M., Hughes, L.E., Harrison, M., Guild, N.A., Gilbert, J.L., Fillman, C.L., Felton, C.M., Dunbar, D.A., Dennehy, J.J., DeJong, R.J., Carson, S., Burnett, S.H., Breakwell, D.P., Berrios, J.E., Benjamin, R.C., Anderson, J.J., Bradley, K.W., Khaja, R., Lee, E., Barker, L.P., Lewis, M.F., Jordan, T.C., Cresawn, S.G., Grace, M.A., Pope, W.H., Ko, C., Russell, D.A., Peebles, C.L., Lawrence, J.L., Hendrix, R.W. and Hatfull, G.F. "Mycobacteriophage RedRock, complete genome." Feb. 1, **2010**. GenBank: GU339467.1.

Presentations (* student authors, ^presenter)

- Kazaferovic, S.^* and Rinehart, C.A. "Restriction Enzymes That Generate Cluster-Specific Patterns in Mycobacteriophages" (**2016**) 46th Annual Student Research Conference held April 2, 2016 at Western Kentucky University.
- Senay, T.^*, King, R.A., and Rinehart, C.A. "Spontaneous Mutations in a Viral Population Increase Genetic Diversity" (**2016**) 46th Annual Student Research Conference held April 2, 2016 at Western Kentucky University.
- Gregory, T.^* and Rinehart, C.A. "An Approach to Identify Mycobacteriophage Diversity Prior to DNA Sequencing" (**2015**) 101st Annual Meeting of the Kentucky Academy of Science held April 2, 2016 at Western Kentucky University.
- Gregory, T.^* and Rinehart, C.A. "An Approach to Identify Mycobacteriophage Diversity Prior to DNA Sequencing" (**2016**) 46th Annual Student Research Conference held April 2, 2016 at Western Kentucky University.
- Gregory, T.^* and Rinehart, C.A. "An Approach to Identify Mycobacteriophage Diversity Prior to DNA Sequencing" (**2016**) UT-KBRIN Bioinformatics Summit held April 8th at Lark Barkley State Resort Park, Cadiz, KY.
- Rinehart, C.A.^, Gaffney, B.L., Wood, J.D.*, Smith, J.R. "PECAAN, a Phage Evidence Collection And Annotation Network" (**2016**) UT-KBRIN Bioinformatics Summit held April 8th at Lark Barkley State Resort Park, Cadiz, KY.

- Rinehart, C.A.^, Gaffney, B.L., Wood, J.D.*, Smith, J.R. “PECAAN, a Phage Evidence Collection And Annotation Network” (2016) 8th Annual SEA-PHAGES Symposium held June 10th-12th, 2016 at HHMI’s Janiela Research Cempus, Asburn, VA.
- Senay, T.E.^*, Gaiko, K.A.^*, Ahmed, T.* , Alexander, K.L.* , Baker, C.M.* , Biddle, J.M.* , Brickeen, X.K.* , Broadbent, M.R.* , Carroll, A.N.* , Coty, J.M.* , Crews, N.M.* , Daniels, M.K.* , Elliott, D.L.* , Khan, S.* , Li, L.* , McDavid, J.K.* , Miller, H.E.* , Rowlett, J.R.* , Squire, M.C.* , Thomas, J.E.* , Stockdale, K.K.* , Stockler, M.L.* , Turner, J.A.* , Urso, O.* , Watkins, H.A.* , Gaffney, B.L., King, R.A., Rowland, N.S., Rinehart, C.A. (2016) “Features for Eight Mycobacteriophage Genomes: AlleyCat (K5), Baehexic (A2), Flare16 (A2), Gruunaga (A6), Jeckyll (K1), LilTurb (A2), Mutante (B1), and NearlyHeadless (A8)” Oral and poster presentation at 8th Annual SEA-PHAGES Symposium held June 10th-12th, 2016 at HHMI’s Janiela Research Cempus, Asburn, VA.
- Rinehart, C.A.^, Johnson, A.^, Doyle, E.^ “GONUTS and PECAAN” forum held June 13th, 2016 at the SEA-PHAGES Faculty Workshop, HHMI Headquarters, Chevy Chase, MD.

Synergistic Activities

- Founder and co-director of the Bioinformatics and Information Science Center (BISC) at WKU. BISC is a collaborative center, with 62 faculty/staff members from 10 departments and 3 colleges, that supports cross-disciplinary research, student engagement, and curriculum innovations in bioinformatics and information science. (2006 – present).
- Co-director and PI for the High Performance Computing Center (HPCC) at WKU. The HPCC is administered under BISC and provides computing support for research, collaborations and the educational mission of WKU. (2010 – present).
- Co-PI with Dr. Rodney King in the HHMI Science Education Alliance (SEA). Our Genome Discovery and Exploration program engages 18-20 freshman and sophomore students in a year long research project to isolate, purify, sequence, annotate and publish bacteriophage genomes specific for *M. smegmatis*. (2009 – present).
 - “HHMI Science Education Alliance Experiment to Engage Freshman in Genomic Research” (2012) Rinehart, C.A., King, R.A., Oral Presentation at the Kentucky Section Meeting of the UT-ORNL-KBRIN Bioinformatics Summit, Louisville, KY, March 30, 2012.
- Co-PI with Dr. Rodney King in the KBRIN-Small Genome Discovery Program funded by the Kentucky INBRE grant renewal to NIH (2014). KBRIN is the Kentucky Biomedical Infrastructure Network that is supported by the NIH INBRE, IDeA Networks of Biomedical Research Excellence, program. The KBRIN-Small Genomes Program training of faculty from outreach universities and community colleges will be done at WKU. Support for this project came from an Institutional Development Award (IDeA) from National Institute of General Medical Sciences, National Institutes of Health Grant 2P20GM103436

Current Collaborators

- Collaborators
 - Dr. Jill Maples, Western Kentucky University
 - Dr. Rodney King, Western Kentucky University
 - Dr. Sigrid Jacobshagen, Western Kentucky University
 - Dr. Shivendra Sahi, Western Kentucky University