Jordan Evan Krebs

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EDUCATION

July 2016-Present	**PENN STATE COLLEGE OF MEDICINE** MD/PhD Candidate, Incoming Class of 2016	Hershey, PA
Aug 2009-May 2013	**LYCOMING COLLEGE** B.S. *Summa Cum Laude*; Biology Departmental Honors, GPA: 3.93 Majors: Chemistry and Biology (Cellular and Molecular Biology)	Williamsport, PA

HONORS AND AWARDS

2016	NIAMS Retreat Poster Award
2016	NIH Post-baccalaureate Poster Day Award
2014	NIH Post-baccalaureate Poster Day Award
2013	Departmental Honors, Biology
2013	Bryon C. Brunstetter Science Award
2013	Service to Lycoming Award
2012-2013	Joanne and Arthur Haberberger Fellowship
2012	3rd place, Undergraduate Oral Presentations, 2012 ABASM meeting
2012	1st place, Poster Presentation, Biochemical Sciences Sections, 2012 UMBC Symp.
2012	Anne Spychala Student 1st Place Oral Presentation Award, 2012 PAS Meeting
2012	NASA Astrobiology Program travel award for Early Astrobiologist
2012	American Society for Microbiology (ASM) Research Capstone Program Award
2011-2012	National Institutes of Health (NIH) Undergraduate Scholars (UGSP) Scholarship
2011	Amgen Scholars Fellowship at the California Institute of Technology
2010	M. B. Rich Endowed Prize for academic excellence

RESEARCH EXPERIENCE

Jun 2013-July 2016; Jun 2012-Aug 2012	**NATIONAL INSTITUTES OF HEALTH, NIAMS.** *Genomics and Immunity Section* Dr. Rafael Casellas. A post-doc and I designed a computational tool to rapidly design sgRNAs and developed a cell-culture procedure to target and confirm KOs or lethality of KOs in both ESCs and B-cells. Targeted mediator complex subunits and then studied gene expression in confirm homozygous KO cell lines.	Bethesda, MD
Aug 2012-Dec 2012	**LYCOMING COLLEGE**, *Chemistry Department*. Dr. Chriss McDonald. Examined the capability of different ratios of [SmI_2] to [ligands] complexes to reduce organofluroide and organochloride bonds.	Williamsport, PA
Jun 2011-Aug 2011	**NASA-JET PROPULSION LABORATORY/CALTECH** *Microbiology and Planetary Protection Group* Dr. Kasthuri Venkateswaran. Studied *Bacillus horneckiae* spores with and without extraneous layer under UV irradiation condition. Analyzed Phylochip G3 data from novel Icelandic hot springs and helped prepare manuscript.	Pasadena, CA

Jan 2010- May 2013 **LYCOMING COLLEGE**, *Biology Department*. Williamsport, PA
Dr. Jeffrey Newman. Studied a novel bacterial strain and compared to related strains. Optimized the extraction and preparative HPLC purification of Flexirubin pigments. Designed a novel computational method to calculate the genomic similarity between microbial genomes based on orthologous sequences.

PEER REVIEWED PUBLICATIONS

Juan AH, Wang S., Ko KD, Zare H, Tsai PF, Feng X, Vivanco KO, Ascoli AM, Gutierrez-Cruz G, **Krebs J**, Sidoli S, Knight AL, Pederson RA, Garcia BA, Casellas R, Zou J, Sartorelli V. Roles of H3K27me2 and H3K27me3 Examined during Fate Specification of Embryonic Stem Cells. *Cell Rep*. 17(5): 1369-1382.

Krebs JE*, Vaishampayan P*, Probst A*, Tom L, Marteinsson VT, Andersen GL, Venkateswaran K (2014). Microbial Community Structures of novel Icelandic Hot Spring Systems Revealed by PhyloChip G3 Analysis. *Astrobiology* 14(3): 229-240.

Kirk KE, Hoffman JA, Smith KA, Strahan BL, Failor KC, **Krebs JE**, Gale AN, Do TD, Sontag TC, Batties AM, Mistiszyn K, Newman JD (2013). *Chryseobacterium angstadti* sp. nov., isolated from a newt tank. Submitted to *Int. J. Syst. Evol. Microbiol.* 63(12): 4777-4738.

McDonald CE, Ramsey JR, Sampsell DG, Anderson LA, **Krebs JE,** Smith SN (2013). Dipyrrolidinomethylamino phosphoric triamide (DPMPA) as an Activator for samarium diioide-mediated reduction of alkyl and aryl halides. *Tetrahedron* 69: 2947-2953.

NON-PEER REVIEWED PUBLICATIONS

Krebs, J (2014). CRISPR Design Tool and Protocol. fig**share**. http://dx.doi.org/10.6084/m9.figshare.1117899.

Krebs JE (2013). "*The Roller Coaster of Undergraduate Research*". *CUR Quarterly*. Council on Undergraduate Research. 33(3): 12.

PROFESSIONAL MEETINGS ATTENDED

2011 Amgen Scholars U.S. Symposium, University of California. Los Angeles, CA.
2010 Moravian College Undergraduate Math Student Conference Moravian College, Bethlehem, PA.

PRESENTATIONS

Oral Presentations

2014- **Krebs JE**, Casellas R. "Genome Editing via CRISPR: background and hands on
2016 exercise". "Engineering with CRISPR, TALENs, and ZFNs" FAES Class at NIH. Bethesda, MD. Feb. 6, 2015, Nov. 6, 2015, Feb. 5, 2016, June 24, 2016.

Krebs JE, Casellas R. "A Bioinformatics Tool to Design Efficient sgRNAs". "Engineering with CRISPR, TALENs, and ZFNs" FAES Class at NIH. Bethesda, MD. July 25, 2014, Feb. 3, 2015, Nov. 3 2015, Feb. 2, 2016, & June 21, 2016

2013 **Krebs** J, Newman J. "Perspectives on the use of GENIII Plates in Undergraduate Research". Biolog Inc. Speaker; 2013 American Society for Microbiology (ASM) General Meeting. Denver Convention Center, Denver, CO. May 18-21, 2013.

Krebs J, Newman J. "*Purification of Flexirubin Pigments from Chryseobacterium*". Honor's thesis presented to Honor's Committee in partial completion of Biology Departmental Honors. April 23, 2013.

Krebs J, Gale A, Newman J. "*Purification of Flexirubin Pigments from Chryseobacterium*". 2013 Pennsylvania Academy of Sciences (PAS) Annual Meeting. University of Pittsburgh-Bradford, Bradford, PA. April 5-7, 2013.

2012 **Krebs J**, Newman J. "Purification and Molecular Structure Determination of Flexirubin Pigments of *Chryseobacterium*". 2012 Allegheny Branch American Society of Microbiology (ABASM) Meeting. Penn State University, State College, PA. Nov. 9-10, 2012.

Krebs J, Sontag T, Newman J. "Genome Sequencing of *Lycomia zaccaria gen. nov. sp. nov.*, *Chryseobacterium haifense*, and *Kaistella koreensis* and Comparison to Two Closely Related Genomes". 2012 PAS Annual Meeting. Cedar Crest College, Allentown, PA. March 30-April 1, 2012.

2011 **Krebs J**, Newman J. "Characterization Of a Novel Genus Within the Family *Flavobacteriaceae*". 2011 ABASM Meeting. Mount Aloysius College, Cresson, PA. Nov. 4-5, 2011.

Poster Presentations

2016 **Krebs J,** Kieffer-Kwon P, Tripathi S, Jung S, Kieffer-kwon KR, Khattabi L, Casellas R. "The Systematic Knock-Out of Mediator Complex Subunits". 2016 NIAMS Poster Day. Bethesda, MD. April 20, 2016; 2016 Post-bac Poster Day. Bethesda, MD. April 20, 2016.

2015 **Krebs, J**, Kieffer-Kwon P, Casellas R. "The Systematic Knock-Out of Mediator Complex Subunits". 2015 Post-bac Poster Day. Bethesda, MD. April 30, 2015.

2014 **Krebs J**, Kieffer-Kwon P, Nelson S, Casellas R. "High-throughput production of custom designed nucleases". 2014 NIH Post-bac Poster Day. Bethesda, MD. May 1, 2014.

2013 **Krebs J**, Gale A*, Sontag T, Keyser V, Newman J. "Average-Nucleotide Identity Bi-Directional Best Hit (ANI_{BBH}): Novel Genomic-Based Method to Differentiate Bacterial Species". 2013 ASM General Meeting. Denver, CO. May 18-21, 2013.

Krebs J, Gale A, Newman J. "*Purification of Flexirubin Pigments from Chryseobacterium*". 2013 ASM General Meeting. Denver, CO. May 18-21, 2013.

Krebs J, Gale A, Newman J. "*Purification of Flexirubin Pigments from Chryseobacterium*". 16th Annual Environmental Chemistry and Microbiology Student Symposium. Penn State University, State College, PA. March 15-16, 2013.

Krebs J, Gale A*, Sontag T, Keyser V, Newman J. "Average-Nucleotide Identity Bi-Directional Best Hit (ANI_{BBH}): Novel Genomic-Based Method to Differentiate Bacterial Species". Poster presented at 16th Annual Environmental Chemistry and Microbiology Student Symposium. Penn State University, State College, PA. March 15-16, 2013.

Krebs J, Gale A*, Sontag T, Keyser V, Newman J. "Average-Nucleotide Identity Bi-Directional Best Hit (ANI_{BBH}): Novel Genomic-Based Method to Differentiate Bacterial Species". 2013 PAS Annual Meeting. University of Pittsburgh-Bradford, Bradford, PA. April 5-7, 2013.

2012 **Krebs J**, Sampsell D, McDonald C, Newman J. "Purification and Molecular Structure Determination of Flexirubins from *Chryseobacteria*". 2012 Undergraduate Research Symposium in the Chemical and Biological Sciences, UMBC. University of Maryland, Baltimore County, Baltimore, MD. Oct. 22, 2012.

2012 **Krebs JE**, Qian J, Kieffer-Kwon K, Casellas R. "Genome Editing via TALEN zinc finger nucleases". 2012 Summer Research Program Poster Day, NIH. Bethesda, MD. Aug. 8, 2012.

Krebs JE, Schrader M, Vaishampayan P, Rabbow E, Rettberg P, Venkateswaran K. "Assessment of *Bacillus horneckiae* spore survival under simulated space ISS conditions". 2012 ASM General Meeting. San Francisco Convention Center, San Francisco, CA. June 16-19, 2012.

Krebs JE, Schrader M, Vaishampayan P, Rabbow E, Rettberg P, Venkateswaran K. "Astrobiological Significance of Exosporium-forming spores for UV resistance". 2012 Astrobiology Science Conference (ABSCISON). Georgia Institute of Technology, Atlanta, GA. April 15-20, 2012.

2011 **Krebs JE**, Vaishampayan P, Venkateswaran K. "Role of Extraneous layer of Bacillus horneckiae spores in Enhanced UV Resistance". 2011 Undergraduate Research Symposium in the Chemical and Biological Sciences, UMBC. University of Maryland, Baltimore County, Baltimore, MD. Oct. 22, 2011.

Collins K, **Krebs J**, Kirk K, Smith K, Duncan T, Failor KC, Newman J. "Characterization of Novel Bacterial Species Identified by Undergraduate Students in a General Microbiology Course". 2011 ASM Annual Meeting. New Orleans Convention Center, New Orleans, LA. May 21-24, 2011.

2010 **Krebs JE**, Failor KC, Marcinko TM, and Newman JD. "Molecular and Phenotypic Characteristics of a Novel Species and Related Type Strains Suggest a Reorganization within the Genus C*hryseobacterium".* 2010 ABASM Meeting. Lock Haven University, Clearfield Campus, Clearfield, PA. Nov. 5-6, 2010

EMPLOYMENT EXPERIENCE

Aug 2010-Apr 2013 **Lycoming College**, Academic Resource Center — Williamsport, PA
Tutor in general and organic chemistry.

Jan 2010-Apr 2013 **Lycoming College**, Biology Department — Williamsport, PA
Microbiology lab assistant
Setting-up equipment, chemicals and tools for microbiology experiments, troubleshooting student problems and maintaining equipment.

June 2009- **Lampire Biological Laboratories** Everett, PA
Apr 2011 Everett Bioprocessing Facility
Intern. Production and purification of monoclonal and polyclonal antibodies.

PROFESSIONAL SOCIETIES

2012 Alpha Epsilon Delta – Pre-Health Honor Society
2012 Beta Beta Beta – Biology Honor Society
2012 Gamma Sigma Epsilon – Chemistry Honor Society
2012 Phi Kappa Phi Honor Society – Interdisciplinary Undergraduate Honor Society
2011 American Society for Microbiology (ASM)

LEADERSHIP

2012 – 2013 President, Beta Beta Beta (Biology Honor Society)
2012 – 2013 Secretary, Gamma Sigma Epsilon (Chemistry Honor Society)
2010 – 2011 Lycoming College United Campus Ministry Search Leader
2010 – 2013 Lycoming College United Campus Ministry Leader
2008 – 2009 Junior Director HOBY Community Leadership Workshop (CLeW)
Founder and President SWPA HOBY Alumni Association

COMMITTEE EXPERIENCE

2013 – 2018 Seminar Board, Audio & Visual and Program, and Fundraising committee
Central PA Hugh O' Brian Youth Leadership (HOBY) Seminar
2012 Audio & Visual and Program, and Fundraising committee
Central PA Hugh O' Brian Youth Leadership (HOBY) Seminar
2008 – 2009 HOBY Central PA Seminar Alumni Advisory Board

SERVICE AND ACTIVITIES

2018 – 2018 Vice-Chair of Program, Central PA Hugh O'Brian Youth Leadership
2017 – 2018 Assistant to Vice-Chair of Program, Central PA Hugh O'Brian Youth Leadership
2015 – 2 016 Paparazzi Director, Central PA Hugh O'Brian Youth Leadership Seminar
2009 – 2010 Lycoming College Community Service Scholar
2009 – 2010 Study Buddies Tutor
2008 – 2015 Alumni Volunteer, Central PA Hugh O' Brian Youth Leadership (HOBY)