Dr. April Anne Kay

Curriculum Vitae

February 19, 2022

**1. PERSONAL INFORMATION:**

April Anne Kay (former name Krumnow)

Associate Professor of Biology

**2. EDUCATION:**

2005 Auburn University, AL

Ph.D. Biomedical Science

Dissertation title: Preserving Biological Materials in Protective Polymers

2001 Clarkson University, NY

B.S. Bio-molecular Science

Presidential Scholar

2000 SUNY Jefferson Community College, NY

A.S. Math and Science  
Honors

**3. ACADEMIC APPOINTMENTS AND OTHER SIGNIFICANT WORK EXPERIENCE:**

1. Associate Professor of Biology Full-time May 2009- present

School of Arts and Sciences

Department of Life Sciences

650 College Drive

Dalton State College

Dalton, GA 30720

Supervisor: Dr. Marina Smitherman

**Responsibilities:**  29 credit hours per academic year which may include evening and/or off-campus courses, advising, and service.

2. Science Lab Coordinator II Full-time May 2008- April 2009

College of Sciences and Mathematics

Department of Biological Sciences

101 Life Science Building

Auburn University, AL 36849

Supervisor: Dr. James Barbaree

**Responsibilities:** Oversee three technicians in the microbiology preparation lab and supervises, trains and schedules employees and student workers and teach undergraduate lab sessions. Assist and train graduate students in laboratory analysis; operate, maintain and calibrate laboratory equipment; organize and maintain research data utilizing computers; maintain and order chemicals, glassware, supplies and equipment for laboratory operations. Assists with conducting literature searches, prepare materials for presentation and teaching, prepare financial statements, reports, and maintains records regarding laboratory operations.

3. Research Associate II Full-time Apr. 2005- May 2008

Auburn University, Auburn, AL

Supervisor: Drs. Vitaly Vodyanoy and Iryna Sorokulova

**Responsibilities:** Handling and maintaining pathogenic and probiotic strains of bacteria and bacteriophage; planning, maintaining, and completing research projects involved in the discovery of new probiotic and bioremediation bacteria; isolating and selecting bacteria from the environment; preserving DNA, bacteria and phage using pioneering methods; performing assays that contribute to biosensor projects, performing molecular biology procedures including extraction and purification of nucleic acids and proteins, agarose gel electrophoresis, and PCR; preparing and analyzing bacteria using bright-field, dark-field and fluorescent and electron microscopy; recording, analyzing and summarizing data; maintaining laboratory equipment; ordering supplies; and making media and buffers as needed.

4. Graduate Teaching Assistant Full-time Apr. 2002- Dec. 2005

Auburn University

Supervisor: Dr. Vitaly Vodyanoy

**Responsibilities:** Conceptualizing, planning and executing original protocols for preserving biological materials in natural polymers such as different types of bacteria and DNA. Other duties included setting up new preservation lab and maintaining and preparing bacterial and DNA for original research. Research included performing molecular biology procedures including extraction and purification of nucleic acids and proteins, agarose gel electrophoresis, and PCR; preparing and analyzing bacteria using light-field, dark-field and fluorescent and electron microscopy; recording, analyzing and summarizing data; maintaining laboratory equipment; ordering supplies; and making media and buffers as needed.

5. Ronald E. McNair Scholar Full-time Apr. 2001-Dec. 2001

Clarkson University, Potsdam, NY

Supervisor: Dr. Craig Woodworth

**Responsibilities:** Mammalian cell culture including isolating epidermal cells from foreskin and culturing cervical tumor lines. Research involved treatment of cell lines then extracting DNA, RNA and protein for analysis using UV-Vis spectroscopy, agarose and SDS polyacrylamide gel electrophoresis, immunoblotting (Western Blots), PCR and Kodak 1D software. Other responsibilities included cell counting using accusizer and hemocytometer, passing cell lines and cryopreservation of cell lines and strains.

6. Ronald E. McNair Scholar Full-time May 2000- Apr. 2001

Clarkson University, Potsdam, NY

Supervisor: Dr. Ga-er Yu

**Responsibilities:** Conducted research in polymer and organic chemistry laboratory and cellular and molecular biology laboratory. Responsibilities included creating protocols for synthesizing various types of triblock polymers. Then using aforementioned protocols to produce, purify and analyze polymers using various equipment such as rotavap, gel permeation chromatography (GPC), gas chromatography (GC), nuclear magnetic resonance (NMR), dynamic and static light scattering (DSL, SLS) and Fourier transform infrared spectroscopy (FTIR).

7. Tutor: Biology, Chemistry, English Part-time Sept. 1998 – Dec. 2000

Jefferson Community College Watertown, NY

Supervisor: Tim Gross

**Responsibilities:** Provided tutoring in open forum sessions where students needing assistant received help in understanding course material.

8. Biology and Chemistry Undergraduate Lab Assistant Part-time Jan 1999 – Dec. 2000

Jefferson Community College Watertown, NY

Supervisor: Chris Boyanski

**Responsibilities:** Provided assistant to lab manager. These duties included: washing glass ware, preparing standardize solutions and media, handing out lab supplies, providing assistant to professors and students during labs, collecting MSDS sheets for chemicals, and organizing and inventorying chemicals.

**4. SPECIAL AWARDS, FELLOWSHIPS AND OTHER HONORS:**

**Awards**

* + - Research Experience for Teachers Award: Providing Research Experience and Practicum on Cyber-Physical Systems (PREP-CPS) at University of Tennessee in Chattanooga (UTC). Summer 2020
    - Outstanding Advocate FYES award and attended FYE National Conference in Orlando, FL. 2016
    - 1st place 14th Annual Graduate Research Forum 2004

Poster Presentation

Auburn University

* + - 1st place 13th Annual Graduate Research Forum 2003

Poster Presentation

Auburn University

* + - Raymond R. Andrews Achievement Award 2002

Clarkson University

* + - Outstanding Science Student Award 2000

SUNY Jefferson Community College

* + - Outstanding Math Student Award 2000

SUNY Jefferson Community College

* + - State University of New York Institute of Technology 2000

Award for Academic Excellence

SUNY Jefferson Community College

* + - Who’s Who Among Students in American Junior Colleges 2000

34th Annual Edition

**Scholarships**

* + - Phi Theta Kappa Transfer Scholarship 2000

Clarkson University

* + - Northern New York Community Foundation, Inc. 2000

2 year Foundation Scholarship

* + - The Alliance with the Medical Society of Jefferson County 2000

2nd Annual Pfizer Pharmaceuticals Scholarship

* + - The Jefferson Community College Foundation. Inc. 1999

Brownville Specialty Paper Products Scholarship

* + - The Jefferson Community College Foundation. Inc. 1999

Harold K. Shannon Memorial Scholarship

**Honor Societies**

* + - Alpha Theta Chi Collegiate Honor Society 2005

National Honors Scholar Society

* + - Phi Theta Kappa 1999

International Honor Society of the Two Year College

**5. PROFESSIONAL ACTIVITIES:**

**Research Symposium Proceedings, Papers, Abstracts**

1. *Wine Journey Event.* Students in my Biotechnology Class at Dalton State co-created a symposium to present their fermentation products. Funded by an Award from PREP-CPS at UTC. Fall 2021.
2. Bianca Goldman, Maria Diaz and Dr. April Anne Kay *Probiotic Survivability in Highly Acidic Environments.* Dalton State College Fall Undergraduate Research Symposium 2019.
3. Allison Prater and Dr. April Anne Kay. *Testing Natural Products for Antimicrobial Effects.* Fall Undergraduate Research Symposium, Dalton State College 2018.
4. Crystal West and Dr. April Anne Kay. *Making Kombucha* Spring Student Scholarship Showcase, Dalton State College Spring Undergraduate 2018
5. Brittany Allison and Jessica Rangel: *Preparing and Testing Media for a local Industrial Microbiology lab at Southern Chemical Company.* Paper Spring 2018
6. Kalea Ingram, Anna Umana and Dr. April Anne Kay: *Teaching Lab Research: Bacterial Conjugation.* Student Scholarship Showcase, Dalton State College 2018
7. Jessica Todd, Jessica Rangel and Dr. April Anne Kay. *Comparing Antimicrobial Acne Medications.* Undergraduate Research Symposium, Dalton State College Fall 2017.
8. Megan Ensley and Dr. April Anne Kay. *Designing a Protocol to Test the Benefits of Prebiotics for Gut Probiotics.* Undergraduate Research Symposium, Dalton State College Fall 2017.
9. Hayden Stinecipher, Candelaria Bautista and Dr. April Anne Kay. *Survey of Various Bacteriophage on Various Strains of Escherichia coli* Student Scholarship Showcase, Dalton State College Spring 2017
10. Annalia Ramos, Eleni Fuentes, Jodan Fuquea, Hayden Stinecipher and Dr. April Anne Kay. *Validating viable probiotic organisms in commercial probiotic supplements.* Student Scholarship Showcase, Dalton State College 2016 and 2017 and Undergraduate Research Forum, Emory University September 2016.
11. Felicia Shorey, Brooke Bingham, Meghan O’Toole, and Dr. April Anne Kay. *Enumeration of Viable Organisms Found in Commercially Available Yogurts.* Student Scholarship Showcase, Dalton State College.2016
12. Muzna Saquib and Dr. April Anne Kay. *Cutaneous Antibacterial Effects of Plant Derived Essential Oils.* Student Scholarship Showcase, Dalton State College.2014
13. Victoria Roy and Dr. April Anne Kay. *Yarrow: Nature’s Antimicrobial*. Student Scholarship Showcase, Dalton State College.2013 and 2014
14. Victoria Goll and Dr. April Anne Kay. *Lactobacillus plantarum: Potential Interactions with Other Bacteria and Antibiotic Effects.* Student Scholarship Showcase, Dalton State College.2013
15. Kevin O’Toole and Dr. April Anne Kay. *Acquired Antibiotic Resistance* *and Probiotics,* Student Scholarship Showcase, Dalton State College. *2012 and* 2013
16. Josh Peppers and Dr. April Anne Kay. *The Inhibitory Effects of Streptococcus thermophilus Using a Modified Kirby Bauer Test*. Albany State University Undergraduate Research Conference, Albany, GA 2012 and Student Scholarship Showcase, Dalton State College. *2012 and* 2013
17. April Anne Krumnow, Iryna B. Sorokulova, Ludmila Globa, Tetyana G. Voloshenyuk, Suram Pathirana, James M. Barbaree, and Vitaly Vodyanoy. *Preservation of Bacteria in Natural Polymers.* Southeastern Branch of the American Society for MicrobiologyAnnual Meeting**.** November 8-10, 2007.
18. April Anne Krumnow, Tatiana Samoylova, Ludmilla Globa, Alexander Samoylov, Valery Petrenko, and Vitaly Vodyanoy. *Storage of DNA in Protective Polymer*. 14th Annual Graduate Research Forum, Auburn University. 2004.
19. April Anne Krumnow, Tatiana Samoylova, Suram Pathirana, James Barbaree and Vitaly Vodyanoy. *Preservation of Bacteria via Desiccation in Innovative Natural Polymer*. International Society of Lyophilization-Freeze Drying, Inc. The Lyophilization Conference. Chicago, IL, United States, September 16-19, 2003.
20. Tatiana Samoylova, Tatiana Voloshenyuk, April Anne Krumnow, Yakiv Ratushnyak, Alexander Samoylov, Ludmila Globa, Suram Pathirana, James Barbaree, Valery Petrenko and Vitaly Vodyanoy. *Dehydration and Storage of Proteins in Natural Polymer.* International Society of Lyophilization-Freeze Drying, Inc. The Lyophilization Conference. Chicago, IL, United States, September 16-19, 2003
21. Tatiana Samoylova, April Anne Krumnow, Tatiana Voloshenyuk, Yakiv Ratushnyak, Alexander Samoylov, Ludmila Globa, Suram Pathirana, Oleg Pustovyy, James Barbaree and Vitaly Vodyanoy. *Protective Medium for Dehydration and Preservation of Biologicals.* International Society of Lyophilization-Freeze Drying, Inc. The Lyophilization Conference. Chicago, IL, United States, September 16-19, 2003
22. April Anne Krumnow, Tatiana Samoylova, and Vitaly Vodyanoy. *Long-term Preservation of Bacteria in Novel Polymer*. 13th Annual Graduate Research Forum, Auburn University. 2003.
23. April Anne Krumnow, Nicole Heldt and Craig Woodworth. *Expression of EGF-Receptor and Effect of PD153035 in Cervical Tumor Lines.* Symposium for Undergraduate Research Experience, Clarkson University. 2001.
24. Yu, Ga-er; Krumnow, April A.. *A direct comparison of micellization properties of amphiphilic block copolymers of ethylene oxide and butylene oxide, (EO)n(BO)m and (EO)n(BO)2m(EO)n.* Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2001), 42(2), 604-605.
25. April Anne Krumnow and Ga-er Yu. *Micellization of a Uniform Diblock and Triblock Polymers*. Symposium for Undergraduate Research Experience, Clarkson University. 2000.

**Research Publications**

1. April A. Krumnow, Iryna B. Sorokulova, Eric Olsen, Ludmila Globa, James M. Barbaree, and Vitaly J. Vodyanoy. Preservation of Bacteria in Natural Polymers. Submission in progress: *Journal for Microbiological Methods* 2009
2. Iryna B. Sorokulova, April A. Krumnow, Suram Pathirana, Arnold J. Mandell, and Vitaly Vodyanoy. Novel Methods for Storage Stability and Release of *Bacillus* Spores. *Biotech. Prog.* 2008, 24(5), 1147-1153.
3. Guntupalli, R., Sorokulova, I., Krumnow, A., Pustovyy, O., Olsen, E. & Vodyanoy**, V.** Real-time optical detection of methicillin-resistant *Staphylococcus aureus* using lytic phage probes. *Biosensors and Bioelectronics.* 2008, 24(1), 151-154
4. Yu, Ga-er; Krumnow, April A. A direct comparison of micellization properties of amphiphilic block copolymers of ethylene oxide and butylene oxide, (EO)n(BO)m and (EO)n(BO)2m(EO)n. *Polymer Preprints* (American Chemical Society, Division of Polymer Chemistry) (2001), 42(2), 604-605.

**6. OTHER PROFESSIONAL GROWTH AND DEVELOPMENT ACTIVITIES THAT CONTRIBUTE TO YOUR PROFESSIONAL CREDENTIALS:**

**Academic Development, Teaching, Human Resource Development Courses**

* Inclusive STEM Teaching Project (ISTP), 2021
* Participating and engaging in Faculty Learning Community on Transparency in Learning and Teaching (TiLT). 2021
* Participated and engaged in Brain Based Faculty Learning Community (FLC) studying *Make It Stick by* Brown, Roediger, and McDaniel. 2020
* Collaboration with Southern Chemical and Textile Company. Student interns. Industrial Microbiology training. Spring 2018-Fall 2020
* Taught Seminar for Students: *How to make a research poster,* Spring 2018
* Awarded an Affordable Learning Georgia Grant for redesigning Microbiology BIOL 2215K and General Microbiology BIOL 3340K courses, 2018-2019
* Docent training at Reflection Riding Arboretum and Nature Center (RRANC) in Chattanooga, TN. 2018-2019
* Attended Center for Academic Excellence event: “Captivating and Transformative Mini-lectures” workshop, 2017
* Globalizing the Future: Infusing International Perspectives Across the Curriculum Faculty Development/Curriculum Enrichment conference at Clayton State University 2015.
* Participatory Action Research with Dr. Barbara Tucker, Dalton State College, 2014-2015
* Native Medicinal and Edible Plants course at Birmingham Botanical Gardens, 2013
* Center for Academic Excellent Conference in Spring 2010, 2011, 2012, 2013, 2014, 2015
* Retaining Your Students , Feb 1, 2013
* Webinar on MOOC’s Feb 19, 2013
* Presented in part as a Panel at the 4th Annual DSC Teaching and Learning Conference, title: “Technology Usage in the Collegiate STEM Classroom.” March 15, 2013
* Pearson Adaptive Learning Lunch April 30, 2012
* FLIP, Inverted Classroom, Sept 21, 2012.
* Degree Works training Sept 26, 2012
* Completed Auto Liability Training Oct 10, 2012
* “Dealing with Difficult Student Behavior” Oct 18, 2012
* “Welcome to Jing” an interface to make videos Fall 2012
* Wrote a proposal for an iPad device to use for student engagement and received an iPad Award in December 2012.
* 7 Habits of Highly Effective People 2009
* The 7 Habits for Managers 2008
* Affirmative Action and Equal Employment Opportunity 2008
* How to Interview 2008
* How to be a Supervisor 2008
* Hazardous Materials Safety each year 2007-2014

**7. SERVICE TO THE CAMPUS/COMMUNITY/PROFESSION THAT CONTRIBUTES TO YOUR PROFESSIONAL CREDENTIALS**

**Community Service**

**Art Donations**: The following is a list of community events or non-profit organizations that raise money utilizing the Arts. As a ceramic artist, Dr. Kay’s contributions include numerous donations of ceramic creations made by her.

* + - Taught pottery class to the girls group in *Reach One Teach One* a non-profit organization helping inner city youth in Chattanooga. Fall 2020.
    - Donated $2000 worth of pottery for TAC fundraiser. Fall 2019
    - Raised funds nearing $1000 for Undergraduate Research Symposium, since Spring 2018.
    - Donated Numerous ceramic flower pots to the décor of Peeples Hall. Dalton State College, 2019
    - Taught a pottery class at Refection Riding Arboretum and Nature Center (RRANC). Donated all materials. Fall 2018.
    - Donated various pottery items to RRANC fundraising, $700 value, 2018, 2019
    - Fall Undergraduate Research Fundraiser, mugs and magnets raised `$600, Fall 2017
    - Donated 10 Mugs to DSC 50 years Celebration Committee, $300 value, Fall 2017
    - Fundraiser for Pre-Health Committee Events raised $160, 2017
    - Donated supplies to make create ceramic items for First Year Experience Course, $300 value, Dalton State College, 2016-2017
    - Stress Relief Workshop involving tie-dye and making ceramics, 2016
    - Morale Boosting Service at Dalton State College, Donated 20 mugs to STM staff and student workers, $600 value, 2016
    - Ceramic Awards for the DSC Roadrunner Race, March 2015.
    - Provided pottery awards for the “Twisted Ankle” Marathon to benefit GA state Parks 2014
    - Created plaques and mugs for “Caught in the Act of Great Teaching” award at Dalton State College 2013-2014
    - King’s Family benefit auction 2014
    - DSC art show at Community Arts Guild, Dalton, GA 2012
    - Provided pottery awards for the “Run with Trish 5K for Team Hoyt” March 2013
    - Hearts of Hospice Donation for silent auction, 2013
    - Hunter Underground, Hunter Museum Chattanooga, TN March 2010 and 2011
    - Art on Main to benefit Chattanooga CARES April 2009-2013
    - Chattanooga Bicentennial Library Benefit Chattanooga, TN  
      October 2009 and 2010
    - Southern Country Auctions to benefit Chattanooga CARES  
      November 2009-2013, May 2011-2015

**Other Service**

* + - Organized Turtle Assurance Colony (TAC) Fundraiser, Raised $2243.77. Fall 2019
    - Lab coordinator for Microbiology teaching and research labs, Dalton State College, 2014-2020
    - Culture various microorganisms for colleagues, 2010-2020
    - Mentor students in Service Learning 2013-2020
    - Mentor students in Microbiological research 2011-2020
    - Collection of food items from biology students to donate to local food bank every semester, Fall 2012 –2019
    - Research Forum at Dalton State College Fall 2015 and Fall 2017
    - Taught Microbiology demonstrations workshop to 2nd grade class from m Tolbert Elementary School, Fall, 2016 and 2017
    - Judge for Coahulla Creek Agriscience Fair, 2017.
    - Taught other Professors’ Research Students how to preserve bacterial cultures 2014-2015
    - Dalton State Foundation Summer camp instructor, 2013
    - Collection of “pull tabs” from biology students to donate to Ronald McDonald House or the Shriner’s Hospital, 2011, 2012, 2013, 2014, 2015, 2016, 2017
    - Environmental Club (Registered student organization) Faculty advisor 2012-2016
    - Pre-Health Care Professionals (Registered student organization) Faculty Advisor 2014, 2015, 2016
    - Beta Chi Nu Research Lounge presenter, 2012-2019

**8. MAJOR COMMITTEES: (in last 10 years)**

* + - Undergraduate Research Symposium Committee. Active Participant since 2018, Co-chair since Spring 2020
    - Fall Undergraduate Research Conference, Dalton State College Chair, Fall 2015 and Fall 2017
    - Student Scholarship Showcase, Dalton State College, Chair, Spring 2015
    - School Committee on Committees Dalton State College, 2014
    - School Pre-Health Studies Committee, Chair, 2013-2018
    - School Policies and Procedures Committee, 2013 -present
    - Academic Rigor Committee, 2014-2015
    - Dalton State Foundation Summer Research Awards, chair, 2013 and 2014, 2015
    - Student Scholarship Showcase, Chair 2013, 2014, 2015
    - Faculty Development, Secretary Dalton State College 2012-2013
    - Academic Conduct Committee, Chair, Dalton State College 2012-2013
    - Faculty Senate Senator, Dalton State College 2012-
    - FAAEC committee for writing Faculty Senate Bylaws, Dalton State College 2011-2012
    - Academic Council, Dalton State College 2011-2012
    - Book Author Committee, Dalton State College, Aug 2009-2011
    - Biology Faculty Search Committee Dalton State College, June-July 2010

**9. MEMBERSHIPS:**

* + - Beta Beta Beta Biological Honor Society, Beta Chi Nu chapter since 2012
    - American Society for Microbiology since 2007