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Faculty Scholarship

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Faculty Achievements, April/May 2020

Otterbein University

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Faculty Achievements, April/May 2020 Report

There are two extraordinary points to make as part of the April 2020 list of Otterbein faculty achievements. First, we want to acknowledge the efforts of all full-time and part-time faculty members in moving roughly 700 face-to-face course sections to online classes with only minimal notice. While many businesses have had to learn to adapt their regular work to new online platforms and we are not unique in that regard, we especially appreciate the student-centric orientation, creativity, timeliness and overall care with which so many of our faculty approached this task. We consider this a notable faculty achievement.

Second, we typically do not allow faculty to submit records of presentations and talks that have merely been accepted to a professional meeting or conference; we only report these to the Board after they have actually been given. However, in Spring 2020, many faculty were in the position of having scheduled talks at conferences cancelled due to restrictions on travel and large gatherings. So, we asked faculty to submit their accepted presentations anyway, so that you could see and recognize the scholarship that would have been disseminated these last several months.

OFFICE OF ACADEMIC AFFAIRS

WENDY R. SHERMAN HECKLER, Provost and Sr. Vice President/Professor in the Department of Education

KATHRYN M. PLANK, Interim Associate Vice President for Academic Affairs/Associate Professor in the Department of Education/Director of the Center for Teaching and Learning

Peer-Reviewed Presentations and Posters
Sherman Heckler, W., Plank, K. McClanahan, T., Smith, J., and O'Grady, D. (2020, April). *Education as Whose Public Good? Mending the K-12-to-College Pipeline for Student Success*. Panel presentation accepted for the annual meeting of the American Educational Research Association (AERA), San Francisco, CA, April 2020. Meeting cancelled due to the coronavirus pandemic.

DEPARTMENT OF ART AND ART HISTORY

NICHOLAS A. HILL, Professor
Artistic Exhibits and Performances

One of 12 artists from 8 states selected to exhibit a series of art work in the Biennial 30 Exhibition at the South Bend Museum of Art in Indiana. Hill also received one the Juror's Awards for his work.

Painting selected for the 32nd Northern National Art Competition at Nicolet College in Wisconsin.

Exhibited over 50 paintings, prints and drawings in an exhibition entitled "India-Gardens and

Seeds" at Art Access Gallery in Bexley, OH. Hill invited noted Indian artist, Kavita Nayar to exhibit her work in the exhibition and her prints were then exhibited at Otterbein University.

Community Outreach and Service

Served as one the jurors for the Ohio State Fair Fine Art Exhibition.

Hosted visiting Indian artist, Kavita Shah during her month-long residency in the Art Department at Otterbein. Hill organized a guest lecture by Ms. Shah at the Phoenix Rising Printmaking Cooperative in Columbus, creating links for new collaborations between India and the US.

Honors and Awards

Granted a one-month artist residency at Taller 99, a printmaking atelier in Santiago, Chile.

During the residency Hill provided critiques for artists in addition to creating new work.

Non-Peer-Reviewed Publications (Books, Book Chapters, Journal Articles, or Book Reviews)

Hill's work was featured in the "New Prints" section of the autumn issue of "The Journal of the Print World," a national arts publication.

DEPARTMENT OF CHEMISTRY

JOAN M. ESSON, Professor
Peer-Reviewed Presentations and Posters
Jenny Doan, Joan M. Esson, Pigmentation of *Unionidae* freshwater mussels, American Chemical Society National Meeting, Philadelphia, PA, March 22-26, 2020.**

Hope Lewis, Joan M. Esson, Differentiating sources of indigo in textiles via liquid chromatography-mass spectrometry, American Chemical Society National Meeting, Philadelphia, PA, March 22-26, 2020.**

Miranda Moore, Joan M. Esson, Technical study of dyes in West African textiles, American Chemical Society National Meeting, Philadelphia, PA, March 22-26, 2020.**

Erin Kibby, Joan M. Esson, Robin Grote, Encouraging chapter growth, American Chemical Society National Meeting, Philadelphia, PA, March 22-26, 2020.**

**Due to the SARS-CoV2 epidemic, the Spring 2020 American Chemical Society National Meeting was canceled.

DEPARTMENT OF ENGLISH

BETH RIGEL DAUGHERTY, Professor
Peer-Reviewed Presentations and Posters

"Teaching Voice: Virginia Woolf's Challenge." Profession and Performance: The 30th Annual international Conference on Virginia Woolf. University of South Dakota, Vermillion, SD, 11-14 June 2020. [Postponed due to COVID-19 until 2021]

"'Old Virginia': Virginia Woolf, Women, Aging, and Work." Virginia Woolf and Social Justice: The 29th Annual International Conference on Virginia Woolf. Mount St. Joseph, Cincinnati, OH, 6 June 2019.

"'The Sidelong Approach': Virginia Woolf's Pedagogical Essays." Virginia Woolf, Europe, and Peace: The 28th Annual International Conference on Virginia Woolf. University of Kent, Canterbury, UK, June 2018.

SHANNON K. LAKANEN, Associate Professor
Peer-Reviewed Publications (Books, Book Chapters, Journal Articles, or Book Reviews)

"On Alleged Post-Loss Signals." Personal essay published in peer-reviewed journal: *LIT* 33. April 2020.

DEPARTMENT OF EQUINE SCIENCE

STEFFANIE . BURK, Associate Professor
Peer-Reviewed Presentations and Posters

Burk, S., Kemeny, E., Gramlich, C., Hutchins, D., and Shields, M. Salivary cortisol concentrations of adolescents on the autism spectrum: a comparison of therapeutic horseback riding and HeartMath mindfulness techniques. Accepted for oral presentation on April 7, 2020 at Center for Human-Animal Interactions Research and Education Research Symposium, Ohio State University, Columbus, OH. [Canceled due to COVID-19]

Shields, M., Kemeny, E., Gramlich, C., Hutchins, D., and Burk, S. The effect of grooming and therapeutic riding by adolescents with autism spectrum disorder on equine salivary cortisol concentrations. Accepted for oral presentation on April 7, 2020 at Center for Human-Animal Interactions Research and Education Research Symposium, Ohio State University, Columbus, OH. [Canceled due to COVID-19]

Pilat, B., Birmingham, S., and Burk, S. Equine massage following intense work: effects on plasma creatine kinase levels. Accepted for oral presentation on April 7, 2020 at Center for Human-Animal Interactions Research and Education Research Symposium, Ohio State University, Columbus, OH. [Canceled due to COVID-19]

Simpson, G., and Burk, S. The effect of slow-feeding hay nets on post-prandial equine salivary cortisol levels. Accepted for oral presentation on April 7, 2020 at Center for Human-Animal Interactions Research and Education Research Symposium, Ohio State University, Columbus, OH. [Canceled due to COVID-19]

DEPARTMENT OF HEALTH AND SPORT SCIENCES

KRISTY L. MCCRAY, Assistant Professor

Community Outreach and Service

Sport Management Education Journal, Editorial

Board Member, January 2020-present

Violence Against Women, Guest Reviewer, March 2020.

Invited Presentations

Invited speaker, February 2020. At the Heart of

Gold Documentary & Discussion:

Understanding how sexual abuse happens and how to prevent predatory behavior at Otterbein. Otterbein University, Westerville, OH.

Guest lecturer, February 2020. Sexual Violence:

Disclosure Response for Athletic Trainers.

ATHT 3800: Organization and Management in Health and Sport Sciences, Otterbein University, Westerville, OH.

Peer-Reviewed Presentations and Posters

Zonder, E., McCray, K., & Taylor, E. (2020, March).

Serious misconduct rules and the NCAA:

Keeping sexual violence out of sport. Paper presented at the Sport Recreation and Law Association Conference, Louisville, KY.

Peer-Reviewed Publications (Books, Book

Chapters, Journal Articles, or Book Reviews)

Cintron, A., Levine, J., & McCray, K. (2020).

Preventing sexual violence on college campuses: An investigation of current practices of conducting background checks on student athletes. *Journal of Legal Aspects of Sport*, 30(1), 41-62.

Levine, J., Cintron, A., & McCray, K. (2019). Legal

implications of conducting background checks on intercollegiate student athletes. *Marquette Sports Law Review*, 30(1), 85-115.

ERICA VAN DOP, Instructor

Peer-Reviewed Presentations and Posters

Van Dop, E. (March, 2020). Impact of Physical

Activity and Self-Regulation in Young Adults with Cognitive Impairments: Group vs.

Individual Training. Poster presented virtually

at the Society for Public Health Education National Conference, Atlanta, GA.

COURTRIGHT MEMORIAL LIBRARY

JESSICA CROSSFIELD MCINTOSH, Associate Professor

Non-Peer-Reviewed Publications (Books, Book

Chapters, Journal Articles, or Book Reviews)

McIntosh, J. C. (2020 January). Bringing Libraries

Together Through Serving a Shared

Community, *Ohio Libraries Quarterly*, 9(1).

Peer-Reviewed Presentations and Posters

McIntosh, J. C. (2019 October 18). Great Minds

Think Alike: Expanding Outreach through

Community Partnerships, Academic Library

Association of Ohio Annual Conference.

McIntosh, J. C. (2019 October 18). Low-Budget

Programming as Student Outreach,

roundtable co-facilitator, Academic Library

Association of Ohio Annual Conference.

McIntosh, J. C. (2019 November 13). Accidental

Partnerships: Making Your Serendipitous

Collaborations More Strategic, panelist,

Library Marketing and Communications

Conference. (Panel Presentation)

McIntosh, J. C. (2020 February 26). Meaningful

Connections: Campus Literacy, Student

Success and Libraries. 2020 Ohio Inspiring

Practices: Achieving Student Success in

Undergraduate Education. Columbus, OH.

(Panel Presentation)

DEPARTMENT OF MATHEMATICS AND ACTUARIAL SCIENCE

RAY (RACHEL) D. KARPMAN, Assistant Professor

Invited Presentations

"From spaghetti to soliton graphs," invited

presentation at the Discrete Math Days

Conference, Mount Holyoke College,

November 16, 2019. In this one-hour talk,

participants discussed their joint work with

Yuji Kodama on soliton graphs, which are

mathematical structures used to model

shallow-water waves. The presentation was

accessible to first-year graduate students in

mathematics, and included original

mathematical results.

MATTHEW J. MCMULLEN, Senior Instructor
Peer-Reviewed Publications (Books, Book Chapters, Journal Articles, or Book Reviews)
"A Drunken Walk in Las Vegas-Catalan Convolutions and Gambling," *Mathematics Magazine*, February 2020.

DEPARTMENT OF MODERN LANGUAGES AND CULTURES

VICTORIA V. FRISCH, Adjunct lecturer
Service Learning Course Projects
SYE 4407: Silence and the Golden Years students brought a fraction of the Otterbein Women's Thrift Store inventory to Columbus Colony Housing (CCH) as a pop-up event on March 9 before teaching transitioned to an online format. Three students were in charge of the project, and 3 more helped select the inventory to be taken to CCH. All of the SYE students helped set up the pop-up store, help residents (some of them Deaf-Blind) shop, wrote out receipts, made change, bagged and carried items to the residents' homes. This SYE class generated over \$100.00 in a single afternoon for the Otterbein Women's Thrift Store. CCH is an independent living community located in Westerville and houses deaf, deaf-blind and other differently-abled senior citizens. This is Frisch's third semester bringing her SYE classes to CCH for a 10 week, immersive experience.

DEPARTMENT OF MUSIC

JENNIFER B. MERKOWITZ, Associate Professor
Artistic Exhibits and Performances
Kate and the Beanstalk, an original composition for narrator and chamber orchestra based on the book by Mary Pope Osborne and Giselle Potter, was to have been performed by the Westerville Symphony for the Westerville Library's "Tunes and Tales" program on March 14, 2020. Postponed due to COVID-19.
Peer-Reviewed Presentations and Posters
Presented "Composing a Musical Life: Music Appreciation through Composition" about her INST thread course at the College Music Society/Association for Technology in Music

Instruction National Conference in Louisville, KY, October 2019.

GAYLE A. WALKER, Professor
Artistic Exhibits and Performances
2020 Concert Choir Tour to New Orleans, including evening performances in: Cincinnati, OH; Birmingham, AL; New Orleans, LA; Baton Rouge, LA; Huntsville, AL; Lebanon, OH.

DEPARTMENT OF NURSING

JOHN D. CHOVAN, Associate Professor
Community Outreach and Service
Member, Board of Trustees, Mohun Health Care Center, Columbus, OH.

DEPARTMENT OF PSYCHOLOGY

MEREDITH C. FREY, Professor
Peer-Reviewed Presentations and Posters
Crisan, C., Braun, R., and Frey, M. Do Multiracial Teens Exhibit Riskier Health Behaviors? Poster Presentation at the 13th Annual Health Disparities Conference, The Evidence of Personal and Societal Determinants to Achieve Health Equity, New Orleans, LA, 2020. [Conference canceled due to COVID-19]

DEPARTMENT OF SOCIOLOGY, CRIMINOLOGY AND JUSTICE STUDIES

CARLA R. CORROTO, Associate Professor
Peer-Reviewed Presentations and Posters
"Problematizing Individualism in Architecture and Design Education," Carla Corroto and Deborah Scott, at the 14th International Conference-Advocacy in Design: Engagement, Commitment, and Action. New York, NY. March 17, 2020.

DEPARTMENT OF THEATRE AND DANCE

T.J. GERCKENS, Associate Professor

Artistic Exhibits and Performances

Lighting Design for World Premiere Opera

"Eurydice," Composed by MacArthur "Genius"

Matthew AuCoin, libretto by MacArthur

"Genius" Sarah Ruhl, and directed by Tony

Award recipient and MacArthur "Genius,"

Mary Zimmerman. Los Angeles Opera,

February 2020.

MELISSA J. LUSHER, Professor

Artistic Exhibits and Performances

Dialect Coach (High British dialect), *The School for*

Scandal, directed by Mark Mineart, Otterbein

University, February 2020.

Dialect Coach (High British, Estuary, and Cockney

dialects), *A Gentleman's Guide to Love and*

Murder, directed by Thom Christopher

Warren, Otterbein University, March 2020.

[Cancelled due to COVID-19]

Honors and Awards

The production of *Chicago* directed at Otterbein

in September 2019 was named one of the

Best 10 Productions of 2019 by *The Columbus*

Dispatch.

SABBATICAL ABSTRACTS, ACADEMIC YEAR 2020-2021 PROJECTS

KYRIACOS ARISTOTELOUS (Business, Accounting and Economics, spring 2021)

Aristotelous will work on a research project that will culminate in a manuscript which will be submitted for publication to a refereed journal. The proposed project will attempt to contribute to our understanding of how livestock production influences greenhouse-gas emissions.

SUZANNE ASHWORTH (English, spring 2021)

Ashworth's sabbatical will advance her book project, *Perverse Feelings: Poe & American Masculinity*. Under contract with Lexington Books, the Humanities and Social Sciences division of Rowman & Littlefield, the book traces the conceptions of white men's bodies and feelings that propel Poe's writing and shadow American manhood. Ashworth's objectives are to complete one chapter and draft a second.

STEFFANIE BURK (Equine Science, fall 2020)

Burk's first goal of this proposal is to become certified as an Advanced Therapeutic Riding Instructor, which will permit her to oversee student teaching in the Equine-Assisted Activities and Therapies minor. The second goal is to publish at least two peer-reviewed journal articles using data collected during previous research studies.

SUE BUTZ (Nursing, spring 2021)

During her sabbatical, Butz will: 1) write/submit an article with coauthors, Drs. Patricia Keane and Alicia Ribar, comparing an osteoporosis screening tool with bone density; 2) attend the American Association of Critical Care Nurses, National Teaching Symposium for continued certification; and 3) attend End of Life Nursing Education Consortium workshop.

DENNIS DAVENPORT (Music, spring 2021)

Davenport will compose music for a one-act opera entitled "First Encounters: Cole Porter

Meets Rodgers & Hart," with libretto by Sarah Davenport (spouse). The opera will be produced by Otterbein Opera Theatre.

KIM FISCHER (Health and Sport Sciences, fall 2020)

Fischer will secure a certification in exercise training cancer survivors/those currently in treatment. Knowledge and skills gained will be added to her course content in an Exercise Science and Health Promotion major class. Fischer will also write a document for others "touched" by this disease as a guide to complementary/conventional therapy for cancer.

PATRICIA FRICK (English, spring 2021)

Frick's sabbatical will advance two primary goals: 1) to undertake an invited, six-week residency at the University of Malaga, Spain to teach and conduct research on Neo-Victorian literature; and 2) to begin research and course development on Victorian women travel writers, especially Maria Graham Callcott (1785-1842) and her cultural chronicles of Spain, India, and Chile.

CARRIE HAYES (Chemistry, spring 2021)

Hayes' sabbatical project will address two objectives. First, Hayes will complete a computational research project exploring lignocellulosic biofuel chemistry, supplementing and writing up past Otterbein student research. Second, she will examine the overlap of science and literature via examination of poetry centered on chemical themes, developing materials for Otterbein coursework.

JONATHAN JOHNSON (Art and Art History, spring 2021)

Johnson will create a suite of related photographs and films that use experimental and autobiographical documentary methodologies to examine his mixed Scandinavian-Asian heritage in Norway. This

work will also thread together explorations of local economic and cultural traditions including their efforts to eliminate the concept of time.

HYUK KIM (Business, Accounting and Economics, spring 2021)

Kim will conduct research on Western multinational corporations' non-market strategies in Asian Emerging Markets. Kim will attend an international conference and present a conceptual paper on the subject matter. He will then develop a manuscript to submit to a peer-reviewed International Business Strategy journal.

LENNY LEIBOWITZ (Theatre and Dance, spring 2021)

Leibowitz will prepare and perform a benefit concert for Otterbein Summer Theatre and additionally create an exciting new Integrative Studies course dedicated to the "Search for the Sublime" in nineteenth century Romanticism. His piano skills are central to his work; developing them will greatly benefit his scholarship and the university.

BRUCE MANDEVILLE (Equine Science, fall 2020 and spring 2021)

Mandeville's sabbatical proposal project will address two objectives: 1) A book project in collaboration with a PT and veterinarian. The inter-relationship between physiological responses to training techniques will be described and well-researched, aimed at educated adult amateur equestrians. 2) The development/launch of a company involved in equine biomarker predictive modeling with an expert in the field.

GRACE MCDANIEL (Education, spring 2021)

McDaniel will engage in research that will result in compiling resources and constructing a format for engaging faculty and practicing teachers in a professional learning community around culturally responsive teaching. The purpose of the learning

community is to share, review and revise syllabi to meet the culturally responsive framework.

JEREMY MOORE (Mathematics and Actuarial Science, fall 2020)

Moore will continue projects from his current research, which involves algebraic structures called rings. Specifically, Moore plans to explore connections between invertibility and linear independence regarding these structures. Together with a colleague at Eastern Kentucky University, he hopes to produce a publishable result in this little-researched area of mathematics.

ADRIANA NENCIU (Mathematics & Actuarial Science, spring 2021)

Groups are mathematical objects used to describe symmetry. The character table of a finite group has applications in physics, coding theory, crystallography, and chemistry. Nenciu's sabbatical research will lead to important advances in understanding groups known as groups of central type. New discoveries will be presented in a published paper or at a research conference.

STEPHANIE PATRIDGE (Religion and Philosophy, spring 2021)

Patridge will complete an invited draft of a manuscript entitled *Why it is Okay to Drink Budweiser*. It is as part of Routledge philosophy series that aims to vindicate commonplace behaviors, such as consuming mass produced/corporate food products, against philosophical objections.

REGINA PRUSINSKI (Nursing, fall 2020)

Prusinski proposes a quasi-experimental project to utilize lecture based education to adult professional learners to evaluate the current degree of agreement or identification reliability of bedside registered nurses and advance practice nurses regarding the identification of low cardiac output syndrome in a pediatric cardiothoracic intensive care unit.

DAVID ROBERTSON (Physics, spring 2021)

Robertson will develop a full suite of computational projects for all core upper-level physics courses, in support of an ambitious departmental initiative to incorporate programming and numerical simulation across the physics curriculum. The department's goals are to develop essential skills for practicing scientists, and to foster deeper insight into fundamental principles.

LOU ROSE (History and Political Science, spring 2021)

Rose's project advances three components of his scholarly agenda: preservation and publication of materials from the Sigmund Freud Papers and related archives in the Library of Congress; publication of Chinese translations of his recent books; and new research into the work of exiled and American scholars during the Second World War.

DIANE ROSS (Education, fall 2020)

Ross will analyze and publish the research from a two year Fulbright Grant entitled: Increasing retention of young adolescent girls in schools in West Nile by increasing their Developmental Assets through a Comprehensive Program of Empowerment which includes: Menstrual Hygiene Management, Sexual Reproductive Health and Personal Narrative Writing.

CARRIE SCHECKELHOFF (Education, spring 2021)

EDUC 1700 Phonics is a foundational course in Elementary Education. This course will be completely reconstructed to address new licensure and accreditation standards. Innovative digital supports (online formative assessment, robust study modules, and video demonstrates) will be created to facilitate student learning in the time between face to face classes.

PATRICK STONE (Theatre and Dance, fall 2020)

Stone will complete the certification for Theatrical Rigger through the Entertainment Technician Certification Program. This certification culminates in an intensive exam which is recognized by the American National Standards Institute as the definitive evaluation of knowledge and skill of professional theatre riggers.

BETHANY VOSBURG-BLUEM (Education, fall 2020)

Vosburg-Bluem will focus on two projects, one scholarly endeavor to pursue her research interest in social studies and sustainability education, the other will advance the Otterbein Department of Education status as an accredited Teacher Education Program through the realignment of her courses.

TERI WALTER (Health and Sport Sciences, fall 2020)

Walters will work on developing a Master of Art/Science in Sport Management degree program or Sport Management track that would be housed under Otterbein's current Master of Science in Allied Health program. The program/track will be based on the Commission on Sport Management Accreditation's principles and national standards.

PAUL WENDEL (Education, fall 2020)

Wendel will serve as Educator in Residence at Olentangy Orange Middle School in fall 2020. Together with 6th grade teacher Janelle Spoltman, Wendel will co-develop hands-on, inquiry science curricula for the newly-revised Ohio Learning Standards in Science, to be disseminated by conferences and publication.

JANE WU (Courtright Memorial Library, spring 2021)

Research title: Academic Librarian's Role in Institution's Internationalization Efforts. This research is to evaluate the needs of faculty and students in the Otterbein's study abroad program and the 3+2 joint education

program with Shanghai Publishing and Printing College (SPPC) to implement customized library resources and services to these users.

MICHAEL YONCHAK (Department of Music, spring 2021)

Tarkus (1971) is the second studio album by the progressive rock trio Emerson, Lake and Palmer. Based on recent arrangements of this album "suite" for full orchestra and wind ensemble, Yonchak intends to construct a reduced chamber ensemble version of this work for winds and percussion.

FACULTY SCHOLAR DEVELOPMENT COMMITTEE

FSDC Internal Grants

FSDC provides funds to support full-time faculty at all levels of career development in scholarly and artistic activities related to their work at Otterbein University. These grants are primarily intended for the enhancement of the professional activities of faculty; specifically research, artistic projects, and publications.

Heidi Ballard, Sociology, Criminology & Justice Studies

Diane Ross, Co-Collaborator, Education
Participatory Action Research (PAR) in global health and sustainable community development (\$2,000)

Participatory action research (PAR) is increasingly applied in global health and sustainable community development research project work. PAR advances community empowerment and social justice principles of sustainability. Through PAR, in partnership with Abanya-Rwenzori Mountaineering Association, indigenous Bakonjo tribal community members in the Rwenzori Mountains of Uganda and Otterbein students, Ballard and Ross will implement several community projects to advance sustainable development including a menstrual hygiene management and sexual reproductive health program at Mt. Gessi school in Karangura village, establishment of a community library in Karangura, and video recording of elder climate change stories for global publication, including the African Storybook Project.

Elizabeth (Beaux) Berkeley, Biology & Earth Science

Environmental Influences on Nutritional Quality and Physiological Responses by African Elephants (\$2,000)

African elephants are increasingly at risk due to human-elephant conflict, habitat fragmentation, and poaching, with an estimated 1 elephant being killed every 15 minutes. As we more intensively manage elephants, we need to understand how environmental factors influence their physiology. The requested funds are to fund a pilot study that builds on the FSDC-funded research started in May 2017 by examining seasonal variation in diet quality in wild and food-supplemented free-ranging elephants, and quantifying the elephants' physiological response via metabolic markers.

Jennifer Bennett, Biology & Earth Science

John Tansey, Chemistry/Biochemistry & Molecular Biology

Detection of Protein-Protein and Protein-Small Molecule Interactions Involved in Bacterial Development (\$2,000)

The goal of the research is to detect and characterize protein-protein and protein-

small molecule interactions to further elucidate the vital cyclic di-GMP signaling pathway of bacteria. In order to obtain new data for this pathway, proteins from the pharmacologically important *Streptomyces* bacteria will be used for all experiments using a cutting-edge technique called Surface Plasmon Resonance (SPR). SPR uses principles in physics to assess the binding affinity and kinetics for each interaction. An increased understanding of the cyclic di-GMP pathway in *Streptomyces* will also be important for understanding this pathway in other bacteria, including those that cause disease.

Sarah Bouchard, Biology & Earth Science
Jennifer Bennett, Co-Collaborator, Biology & Earth Science

Diet and the Gut Microbiome (\$2,000)

The gut microbiome plays an important role in the maintaining the overall health of an organisms. Two studies have been conducted in which the microbiome may be playing a critical role (mealworm and tadpoles studies). The gut samples have already been collected, and the FSDC funding will cover costs associated with microbiome analysis (DNA library prep and Next Generation Sequencing). These projects represent a completely new and cutting-edge direction of research in Bennett's lab.

Jessica Crossfield McIntosh, Courtright Memorial Library

The Intersection of Social Justice and Public Services: An Action Plan for the Academic Library (\$2,000)

This project explored services and spaces in public libraries and how they can influence the practices of a university library as they adapt to changing demographics in the humanities and professional programs. These lessons will be examined through the lens of critical librarianship, the idea of librarians as advocates for social justice, diversity, and inclusion. The outcomes from

this project will include examinations of our public service policies and research services, trainings for our librarians and student employees, and documentation for how the library can continue to best serve our campus and community. The goal of this sabbatical work is to expand ideas of what the library can offer its community while doing so with our unique and ever-evolving student body in mind.

Joan Esson, Chemistry

Characterization of natural dyestuffs: Justicia spicigera and indigo-producing sources (\$2,000)

Funds will allow the purchase of consumables and needed instrument time at The Ohio State University to finish one of Esson's sabbatical projects, which focuses on the characterization of the dyestuff *Justicia spicigera*, which has been used as a blue dye in textiles and codices for at least 500 years. Final experiments will allow for definitive identification of the structure of the blue dye.

Jessie Glover, Theatre & Dance

Theatre of Conviction at Marion Correctional (\$1,998)

A new work of theatre about a factory closing in a Rust Belt town was developed in collaboration with Theatre of Conviction, a company of men who make theatre at Marion Correctional Institution. Performances will take place in mid-June 2020 and will invite both "inside" and "outside" audiences to experience a new 90-minute work and dialogue with the creators.

Robin Grote, Chemistry

A two-step, one-pot synthesis of 1,3,4-oxadiazoles (\$1,200)

A two-step, one-pot cyclodehydration reaction is being developed. This methodology is used to synthesize medicinally useful 1,3,4-oxadiazoles. This research project focuses on the development of substrate scope and reaction mechanism. Upon completion this

work will provide a mild, cost-effective reaction of utility to the chemical industry.

Carrigan Hayes, Chemistry

Exploring Biofuel Model Compounds via Computational Chemistry (\$2,000)

Computational chemistry provides a way to efficiently evaluate the utility and reactivity of biofuels. Petroleum-based fuels are hydrocarbon-based, while biofuels contain heteroatoms such as nitrogen and oxygen. These structural differences impact their chemical properties. Students in Hayes' research lab have computationally investigated a simple thermodynamic parameter for biofuels, the energetic cost of breaking a single bond, as a starting point for understanding the chemistry of biofuels as compared to petroleum-based fuels. FSDC funds will enable this research to continue by replacing the three computational stations in the lab for student use.

Nicholas Hill, Art and Art History

Contemporary Printmaking Research: A Residency at Taller 99, Santiago, Chile (\$2,000)

Awarded a residency for research in contemporary printmaking techniques at Taller 99, the premier printmaking studio in Santiago, Chile. The one-month residency will enable Hill to incorporate the printmaking process, algraphy, into his creative work. The co-director of Taller 99, Rafael Munita, has done extensive research and creative work using this process, and he will assist in the exploration of the process and its application to Hill's creative concerns. Additionally, Hill will invest time examining the comprehensive collection of contemporary Chilean prints at Taller 99.

Jonathan Johnson, Art & Art History

The Falcon of Ayutthaya (\$2,000)

The Falcon of Ayutthaya is an experimental film that explores the myth of Constantin Phaulkon, a Greek adventurer who became an advisor to King Narai's court in 17th

century Siam. Phaulkon married a woman of mixed Asian-European heritage, rose to a top post in Narai's court and was eventually executed before the 1688 Siamese Revolution. In this film, Phaulkon becomes a tragic character that symbolizes numerous current global conditions and complicates ideas about otherness, immigration and nationalism.

Documentary Experiments: A Film Festival Tour (\$1,000)

This project brings several experimental documentary short films and photo essays to completion, including an international tour at film festivals, art galleries and artist-run spaces. These artworks explore contemporary ideas of the self and nature under the context of transnationalism as defined in texts such as Pico Iyer's "Global Soul." Works included in this project are "The Falcon of Ayutthaya," "Frozen Shadows" and "From the Far East to the East Side."

Dean Johnston, Chemistry

Preparation of Zinc(II) Ionic Cocrystals using Solvent-Assisted Mechanochemistry (\$1,900)

Ionic cocrystals are crystalline solids that contain neutral organic molecules and inorganic salts in a single crystal. The ionic component significantly alters the physiochemical properties of the cocrystallized molecule, potentially providing a route to pharmaceuticals with improved stability, solubility and bioavailability. Johnston has successfully prepared a series of ionic cocrystals of zinc(II) chloride cocrystallized with various benzamide compounds. This project will expand the synthetic methodology to include solvent-assisted grinding to allow the rapid preparation and characterization of a wider array of target cocrystals.

Jean Kelly, Communication

Spiritual Narrative "Sacred Geographies"
(\$2,000)

Funding will support the completion of a trade book manuscript during a writer's retreat in Ireland, where Kelly will spend part of her sabbatical and complete research for the project tentatively titled "Sacred Geographies." This spiritual memoir documents Kelly's pilgrimages to places where writers of faith - both true believers and the lapsed - lived and prayed, wrote and worshipped, questioned and believed. The manuscript will be submitted for publishers in December 2019.

Amanda Kline, Art and Art History

Bloody Springs Road (\$1,970)

"Bloody Springs Road," a visual art project, is composed of photographs, moving images, and collages. Kline creates spaces where fact and fiction are blurred to portray a personal mythology. She dissects the nuances and contradictions of identity through portraits, landscapes, and still lives. The title refers to the road on which Kline grew up; a place to which she pays homage in this series.

Margaret Koehler, English

Poetry and Medicine in the 18th Century
(\$1,990)

Koehler will conduct research in Edinburgh and Glasgow for her book project "Poetry and Medicine in the 18th Century." Koehler will visit archives at the University of Edinburgh (the most innovative and, eventually, prestigious medical school in Britain in the 18th century) and the library of Scotland's Royal College of Physicians; in Glasgow research will be conducted at the Centre for the History of Medicine. This research will help Koehler build context for her study of connections between poetry and medicine in the period.

Yiyuan Liu, Business, Accounting & Economics

When Online 'Brokers' Go Social - Drivers of User Engagement on Deal Sharing Websites
(\$1410)

Two advanced text-mining analytics toolkits will be acquired that support Liu's research project on consumers' online social behavior and perceivable sentiment for promotional information. First, Google's natural language API (Application Programming Interface) is needed to conduct text mining and sentiment analysis in multiple languages (i.e., Mandarin and English). Second, LIWC 2015 (Linguistic Inquiry and Word Count) toolkit for psychological analysis of consumer text-based data will be purchased. Both toolkits are advanced packages that deal with unstructured data-features that are not offered in common statistics software. These toolkits will also benefit digital marketing and marketing analytics courses taught by Liu in the department of Business, Accounting and Economics.

Jennifer Merkowitz, Music

Max Computer Music Workshop Attendance as Preparation for a New Composition (\$2,000)

Merkowitz will attend the Max Computer Music Workshop in Charlotte, NC in June. This workshop will be an opportunity to spend time on further developing her computer music programming skills, specifically with a program called Max. Max is used in the Electro-Acoustic Music classes at Otterbein, so this workshop will be helpful to both her teaching and her composing. Merkowitz has a new commission to write a piece for flute and electronics for Columbus-based performer Lindsey Goodman, and will begin work on this piece at the workshop.

Pei Pei, Mathematics and Actuarial Science

Predictive Analytics (\$2,000)

Predictive modeling is becoming a more and more important topic to actuarial science. With increased computing power, cheaper storage, better software, and democratization of data, this area continues

to receive increased focus and attention in the actuarial community. Started from Fall 2018, Predictive Analytics has been a new exam required in the curriculum of the Society of Actuaries. Otterbein Actuarial Science Program correspondingly plans to offer a new Predictive Analytics course starting in Fall 2021. Since the predictive modeling is also a new topic to Otterbein actuarial professors, there is an immediate need for actuarial professors to acquire this new knowledge. FSDC funding will be used to cover two actuarial professors' registration fee for the 12-month Predictive Analytics e-Learning Modules which is an online training course/resource offered by the Society of Actuaries.

Nicholas Ross, Music

Leopold Godowsky: Apostle of the Left Hand (\$2,000)

Celebrated composer-pianist Leopold Godowsky (1870-1938) earned the nickname "Apostle of the Left Hand" for writing innovative piano music for the left hand alone. In December 2018, Ross recorded three of his most important works in this genre, the Suite for Left Hand Alone, Concert Album and Waltz-Poems. In April, a fully edited 'master' recording and program booklet were completed and sent to Centaur Records Inc. FSDC funding will help to cover the cost of the recording.

Brandon Sinn, Biology & Earth Science

Oxford Nanopore MinION DNA Sequencer (\$1,900)

Mitochondria are critical to eukaryotic life, and the maintenance of their genomes is central to their role in the cells of animals and plants. Sinn's research to date has revealed that some plant mitochondrial genomes also contain lengthy portions of ancient fungal genomes, representing horizontal gene transfer events from more than 70 million years ago. FSDC funds will be used to purchase a DNA sequencer that is uniquely able to sequence lengthy DNA molecules,

which will allow his lab to sequence entire genomes to detect foreign acquired sequence in other plant groups as well as other sequencing projects.

Deborah Solomon, History & Political Science
Japanese Print Technology in the Context of Empire (\$2,000)

A simple, portable mimeograph-style device called a gariban or toshaban, first patented in Japan in 1894, was introduced to the Korean peninsula with Japanese colonization. While scholars have studied gariban use within the Japanese islands, its wide-reaching impact in Japanese colonial contexts has been overlooked. FSDC funding will help Solomon assess the importance of gariban printing on the Korean peninsula, especially after the company that produced the gariban expanded production and opened its first branch office in Seoul in 1912, selling these devices to the Government-General of Korea as well as to the general public.

Jane Wu, Courtright Memorial Library
Using Curriculum Mapping as a Tool to Integrate the Information Literacy and Evidence-Based Research in Nursing Curriculum (\$1,600)

Increasing competency in Evidence-based practice (EBP) demands an underlying understanding of how to access relevant research; critically appraise available research and use appropriate criteria for determining the validity and applicability of research findings. Hence, increasing competency in information literacy (IL) is the foundation for evidence-based practice, although often neglected. In order to strengthen competency in information literacy and evidence-based research, in nursing curriculum, this research is to investigate how to use curriculum mapping as a curriculum-integration tool to systematically incorporate the components of information literacy in the teaching of EBP.

Anna Young, Biology & Earth Science
*Characterizing Trends in Human-Wildlife
Conflicts using Wildlife Rehabilitation
Records (\$1,595)*

Young and her team reviewed 45,668 records representing over 280 species admitted to a wildlife rehabilitation facility over a 10-year period (2005-2014). The objective was to examine how causes of admission for commonly admitted species may vary across taxa throughout the year, with the goal of

examining the value of wildlife rehabilitation records for characterizing local human-wildlife conflicts and prevalence of select wildlife diseases. Our analyses support the value of wildlife rehabilitation facility data for characterizing some pressures from local human-wildlife conflict and select disease trends for certain taxa, as well as utility for decision making related to conservation education.

FSDC High Impact Grant

The High Impact Grant provide funds to support a full-time faculty member at any level of career development in the scholarly and artistic activities related to their work at Otterbein University. This grant is primarily intended for the enhancement of the professional activities of faculty; specifically research, artistic projects, and publications.

Ashley Simons, Health & Sport Sciences

Joe Wilkins, Co-Collaborator, Health & Sport Sciences

Shelley Payne, Co-Collaborator, Health & Sport Sciences

Spatial Learning in Allied Health: the Utility of Musculoskeletal Ultrasound

Ultrasound has recently become more popular as a musculoskeletal diagnostic tool, comparable to MRI in its diagnostic accuracy. When compared to other diagnostic imaging tools, ultrasound has the advantage of examining structures in real time, allowing clinicians the ability to observe life functions and movement within the body. The portability and low cost of ultrasound units in recent years has allowed ultrasound to be brought to the athletic sideline, the patient at the bedside, or in the clinic (Smith, 2018). This has allowed a range of clinicians to add the tool of diagnostic ultrasound to their toolbox. The purpose of this study is to determine if utilizing musculoskeletal ultrasound as an active teaching tool can improve undergraduate health professions students' conceptual understanding of spatial and kinematic anatomy. It is hypothesized that the use of ultrasound imaging will assist student learning by providing a clinically relevant view of anatomical structures and movement sciences.

FSDC Course Release Grant

The Otterbein FSDC Course Release Grant provides funds to support one course release for full-time faculty at all levels of career development engaged in scholarly and creative work activities related to their work at Otterbein University. Release grants typically provide one course release per project.

Joan Esson, Chemistry

Manuscript on a natural dyestuff and external proposal about achievement disparities in STEM courses

This course release will provide time for Esson to write a paper to be submitted for peer-reviewed publication as well as a grant proposal to the National Science Foundation (NSF). The paper will describe research Esson completed while on sabbatical in Spring 2019 at the Indianapolis Museum of Art characterizing the Central American dyestuff *Justicia spicigera*, which is used as a source of blue dye in textiles and cultural heritage objects, while the external proposal will request funds to expand on an avenue of science education research for which she previously received an NSF grant.

Faculty Achievements, April/May 2020 Report

International Collaborative Faculty Enrichment Grant

The Otterbein University Faculty Collaborative International Enrichment Grant is designed to expand faculty members' international learning, awareness, and experience, both for the potential enhancement of the curriculum and for their own intellectual enrichment. Although global learning can be meaningfully addressed in a local or broader national context, the purpose of these grants involves the travel, collaboration, and immersion of a team in a context outside of the United States.

Amy Sheeran, Modern Languages & Cultures

Joan Esson, Chemistry

Kerry Strayer, Communication

Mexico to Guatemala: Feminist Perspectives Past and Present

Faculty members will travel to Mexico and Guatemala in July 2020 to provide opportunities for Otterbein students to engage in service opportunities and a faculty-led travel course that will encourage their growth as global citizens and allow them to engage in some of the 5 Cardinal Experiences. Faculty will develop international scholarly relationships, develop course materials, and conduct field research and scientific and archival studies. Our goals center on the concept of feminism from colonial times to the present and its relation to indigenous cultures, which we hope will provide students an expansive, intersectional perspective on global citizenship. We plan on visiting three cities in Mexico and their surrounding municipalities (Mexico City, Oaxaca, and Chiapas), as well as three cities in Guatemala (Guatemala City, Antigua, and San Juan la Laguna) in order to: conduct research on central figures in colonial encounters at the national archives and historical sites; visit museums that feature exhibits on regional artists and textiles to meet their staff and conduct scientific studies; meet with NGOs working with artisanal cooperatives and interview members of the cooperatives; and visit suitable locations to engage students during a travel course.