

## Literal Exegesis Remixed through the Centuries

BY ELISE TAKEHANA

Sarah Bromberg's attributes her initial interest in medieval art to two early educational experiences: reading an essay in high school titled "The 12th-Century Renaissance" and taking a college English course called "Visionary Creatures." Many medieval authors wrote about their prophetic visions in highly visual and symbolic ways, but for Bromberg, "once I was introduced to Hildegard of Bingen, that was it! Her writing was so visual and there were endless pages of symbolism. I just love the idea of multiple layers of interpretation." For Bromberg, medieval art and these manuscript illustrations are compelling because of their concision. "Medieval writers and artists got so much information into a single image and then wrote their own interpretations for pages and pages for endlessly complex and multilayered interpretation."

Bromberg is both an art historian and studio artist, but the historian side of her has spent many years now preparing a book on Nicholas of Lyra's *Postilla super totam Bibliam*, an exegetic commentary on the Old and New Testament. Bromberg focuses on his Old Testament books, especially the illustrations clustered in the Book of Exodus and the Book of III Kings. By the 14th century, there were so many symbolic interpretations of the Bible that Nicholas of Lyra wanted a clearer picture of what was literally happening in passages. As a part of his exegesis, he illustrated his commentary with 50 images mostly of architecture, prophetic visions, and temple instruments.

Nicholas of Lyra's illustrations focus on specifics. For instance, he is very interested in the measurements of Solomon's temple. "There are 200 pomegranates on the capitals of the Temple of Solomon. He wants to know where on the capital are those pomegranates arranged. On the top, on the bottom, are they separate

from one another?" He will illustrate curtains in that temple. He wants to know what "appendages" look like and determine where they are located in the temple. Similarly, when Bromberg looked to the illustrations of a four-headed creature described in the Book of Ezekiel, "Nicholas of Lyra gets into these hyper-precise issues. Are the creatures' faces all facing up or all facing different directions?" These images were often side-by-side comparisons of how Christians interpreted a passage as opposed to Jewish scholars. Over time, Christians became more interested in Jewish scholarship on the Bible which they absorbed as their own when Nicholas of Lyra's illustrations appear in Christian bibles divorced from his original commentary.

Because Nicholas of Lyra's scholarship is foundational to biblical commentary, his work was frequently copied for centuries, resulting in approximately 700 versions and interpretations stretching across Europe and the Christian world through to the 17th-century. While many scholars have focused on the textual material of his work, Bromberg is focusing on the changes in the illustrations over a larger number of manuscripts, which, over time, employ new styles and media and shift the meaning of the originals. Given the number and variety of Nicholas of Lyra's illustrations, Bromberg conceptualizes each chapter of her book as a kind of case study focusing on an individual manuscript or of one illustration across a number of manuscripts. "It is a little daunting having all these images, where to go with them, which ones to choose. I paper my living room with all these print outs."

Despite the increasing number of copies of Lyra's work being digitized, those copies do not always provide sufficient textual information, which means Bromberg's work brings her to many libraries and archives. "When we look at the manuscripts on screen, they're flat. There's



something about turning a stiff page made out of parchment and seeing how it's slightly translucent." The material experience of the manuscript doesn't translate into digital versions. For instance, some manuscripts are so heavy and large that they require multiple librarians to lift them from the vault. For Bromberg, "There's something about being in contact with the actual manuscript that generates my ideas."

Beyond the importance of materiality, visiting the archives invites new discoveries. Three years ago, Bromberg was in Chicago at the Newberry library examining a 15th century printed book of Lyra's commentaries, when she stumbled upon a printed 17th century version "with hand-colored, hand-engraved gorgeous illustrations that clearly copied Nicholas of Lyra without referring to him and without referring to the Jewish commentaries he was referring to." These chance encounters are what we are all missing while researching from our computers.

As Bromberg continues to work on the book, she is striving to capture a broader context for Nicholas of Lyra's work. Since Lyra often used Jewish works to solve debates amongst Christian scholars, she is interested in looking at more illustrated Hebrew manuscripts, which she has begun to do this past summer. She is also expanding the timeline of her inquiries. Where she previously examined copies made in the century and a half after Lyra's original manuscript, there are still versions of his work in 17th-century



woodcuts that she would like to explore.

While she sees her historical research as separate from her drawing, Bromberg could never decide between the two. "There's something about creating something that didn't exist in the world yet." For her, art was always a necessary and natural part of what she does. Her mother is a printmaker, so living in an active studio was being at home. Even as an art historian, she practices drawing as a way of knowing. With the quarantine, Bromberg set up a dining table project where

she worked out what drawings she could create with watercolor pencils, micron pens, and other nontoxic supplies. While she uses this home studio setup to support her students (she does every assignment she gives them and photographs her progress for them) she also frees herself from the rules she teaches students, like perspective, for instance, to see what more is possible. "I am inspired by Piet Mondrian, Paul Cezanne, and Jim Dine, who follow traditions at the same time as they invent new modes of representing and conceptualizing the visible world around them" and 2020 is as good as any year to see imagine the world differently.



Sarah Bromberg, After Mondrian, Graphite Drawing, 2020.



# Measuring Risk to Improve Rehabilitation

BY ELISE TAKEHANA

Dara Drawbridge's work in institutional corrections, community corrections, drug court, juvenile justice, gang violence, and homicide, despite its impressive range, is ultimately guided by her passionate investment in improving criminal justice practices and supporting agencies and practitioners as they optimize their use of evidence-based practices to achieve outcomes.

Her most recent publications study Risk-Needs-Responsivity (RNR). RNR is an evidence-based framework that guides assessment, case management, and rehabilitation of justice-involved individuals. This framework uses scientifically-developed instruments, called risk-needs assessments, to assess an individual's overall likelihood of reoffending as well as factors that drive offending such as past criminal history, personality patterns, cognitive and affective patterns, substance abuse, and education and employment problems to name a few.

"We want to make sure we're accurately accessing people who come into contact with our CJ system for their likelihood of future criminal behavior and that we respond in a manner that corresponds with their risk level." For those unlikely to re-offend, it's best to keep them out of the criminal justice system as much as possible. For those who pose a higher risk of reoffending, the RNR framework encourages interventions that match the individual's needs and motivations.

While there is a large body of research that supports the efficacy of such frameworks, there is also a sizable amount of research that reveals how often practitioners

struggle to implement the framework consistently. For Drawbridge, that means her work as a researcher is largely about "building relationships with practitioners and the agencies, earning their trust and working hard to communicate clearly to them" the value of proper implementation of risk-needs assessment instruments and associated case management.

The challenges of implementing these instruments vary widely. Some practitioners don't "buy into the tool" and rely on their professional experience instead. Sometimes instruments are not administered at the right time or stage in the judicial process. In other instances, instruments are not administered by a properly trained individual or instruments are not consistently deployed across an agency. Ultimately, the instrument should drive case management decisions toward individualized treatment and rehabilitative interventions that align with the risks and needs of an individual justice-involved person. However, some interventions involve referring individuals to behavioral health facilities that might not be accessible, which can also be a barrier to implementation. "With everything in the justice system, implementation is really important. Tools need to be implemented with fidelity and that is a very difficult thing to do."

Currently, Drawbridge is serving as a local action research partner, along with Dr. David Weiss, on the Shannon Grant, a Community Safety Initiative with the City of Fitchburg. The project strives to reduce youth crime and delinquency. Drawbridge and Weiss have been working on a community risk assessment

that pools data from the Census Bureau, Department of Education, Department of Public Health, and area high schools to determine community-level indicators of crime and delinquency. They also offer suggestions and provide information to the City of Fitchburg on evidence-based programs for decreasing crime and delinquency. Drawbridge and Weiss also conducted a focus group with the agencies involved in this grant to help strategically plan future initiatives.

Drawbridge and Weiss have also been working extensively with the justice agencies in the design of education and training for practitioners working with drug courts. "The beauty of drug court is its multi-disciplinary team. It's got treatment at the table, law enforcement, judges, defense, prosecution, and probation. Everybody is coming from a different field and there's a lot of advantage to that, but it can be challenging when you've got people from different backgrounds, and maybe different philosophies, at a table."

Because her research "straddles the line between psychology and criminology," she can work with a diverse set of researchers and attack challenges in the criminal justice system from a range of useful vantage points. Drawbridge is also consulting with addiction psychologists on developing "a pro-social curriculum for justice-involved persons with co-occurring mental health and substance use disorders." The curriculum utilizes a cognitive-behavioral approach to address risk factors for criminal behavior.

While Drawbridge has only been at Fitchburg State since

Continued on page 5

# Battling Anti-Malarial Drug Resistance

BY ELISE TAKEHANA

Dennis Awasabisah is a bioinorganic chemist currently researching how quinoline-based antimalarial drugs act on heme groups. While quinoline-based drugs have been used against malaria for well over one hundred years, their molecular mechanisms are still not fully understood. As the malaria parasites (genus *Plasmodium*) develop resistance to these drugs, it becomes all the more important to understand the biochemistry of these drugs. "If we want to design a drug, we need to know a lot of things about a drug. Where is the drug going to target? If it targets a particular site, how does it interact with a target? Some drugs fit in a certain pocket, or in a certain enzymatic site. Some of them interact with specific parts of our body."

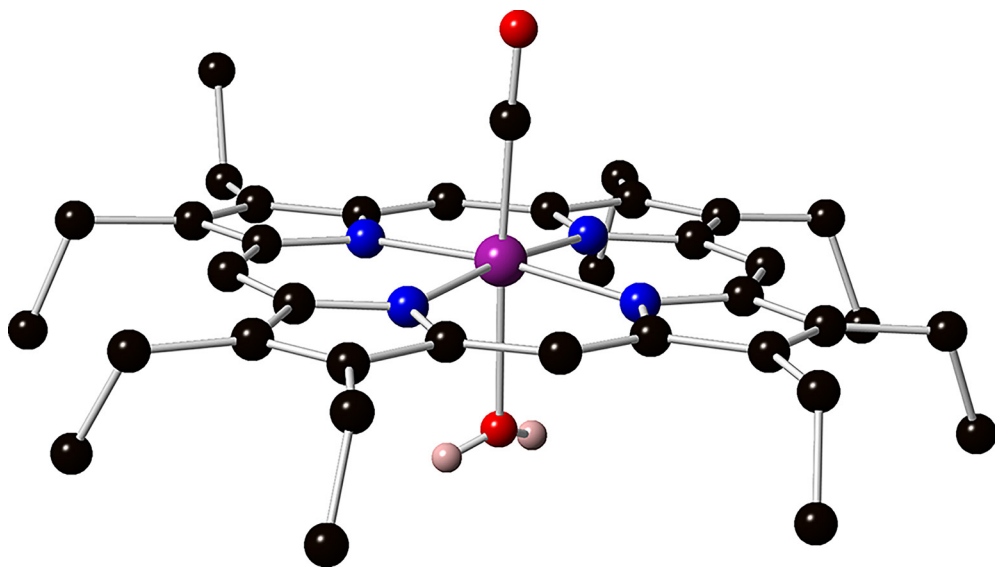
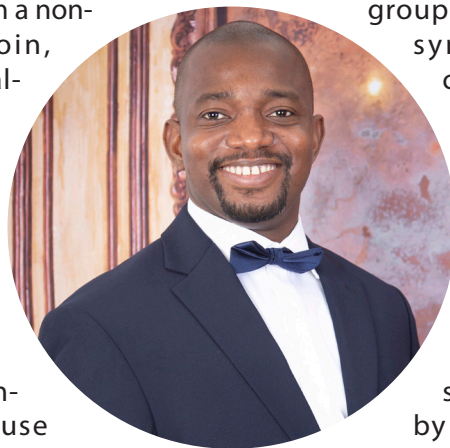
The life cycle of the *Plasmodium* parasite is complex as is the interaction between it, our own human biochemistry, and the functioning of antimalarial drugs themselves. It's no coincidence that fighting malaria has been a struggle now millennia long. But, in short, the *Plasmodium* parasite attacks red blood cells, breaks down hemoglobin into amino acids, which it eats, and a heme group that is

ultimately toxic to the parasite. To combat this toxin, the parasite relies on heme groups bonding together to form a non-toxic hemozoin, which is crystalline. How hemes bond to one another is debatable. It could be the parasite itself, proteins in our own body, or the heme themselves that cause hemozoin formation. Quinoline-based drugs inhibit the hemozoin formation process. How the drug does blocks the hemozoin formation process remains a point of debate. Does the drug bond with the heme or does it sit in between hemes? Awasabisah hypothesizes that it's the former.

Testing this hypothesis involved many steps. He and his students made synthetic ruthenium heme model compounds (isolating the natural heme from blood is cost prohibitive as is creating a natural heme model compound with ruthenium). These cost-effective ruthenium(II) carbonyl

octaethylporphyrin model compounds are easier to prepare and characterize. The Awasabisah group combined the synthetic heme compounds with the antimalarial drugs to study how the drug interacts with the heme group. While they examined this process in solution form by spectroscopy, their findings in the solid form have yielded novel results.

Creating these solid crystals is a challenge of its own. Awasabisah tried to do this as a doctoral student and wasn't able to do so then, but he and his student made a few at Fitchburg State. "I was quite surprised that it worked. Growing crystals for X-ray crystallography is luck and, in some cases, it's an art." Using X-ray crystallography and with the assistance of his collaborator at the University of Oklahoma, Dr. Douglas Powell, Awasabisah's group determined the structure of the ruthenium(II) carbonyl octaethylporphyrin-quinoline complex and found that the quinoline group bonds to ruthenium via its nitrogen with the carbonyl group on the opposite side. As expected, the four nitrogen atoms of the porphyrin ring are bonded to ruthenium. Knowing both the target and the interaction between the drug and its target means understanding what is actively inhibiting the growth of the parasites—in this case, the quinoline drugs bind to the heme and prevents two heme groups from combining together. "If we know how the interaction

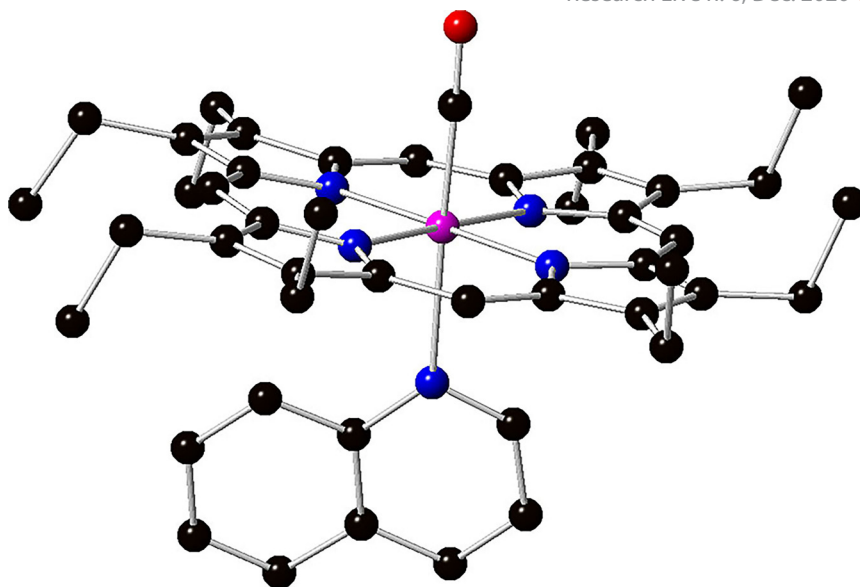


Molecular structure of the heme model compound obtained by X-ray crystallography

occurs, we can all always alter other groups around the drug to make it more effective.”

But to be more effective, “A drug binding to a site has to bind in the right way – for example, not too strong or not too loose.” Awasabisah uses electrochemistry to help understand electron transfer processes between the heme and the drug. Electrochemistry also gives chemists the ability to characterize compounds by their redox potential – essentially how willing or unwilling a compound is to lose or gain an electron. He has already determined that removing an electron from the heme-drug compound doesn’t affect the binding but the electron lost comes from the heme, not the drug. He has yet to test what would happen with an added electron, but it’s on his long list of experiments to conduct.

Knowing redox properties of metals helps chemists who are developing drugs to determine the best metals to employ given the many potential interactions any drug might have with the many substances in the human body. The properties of transition metals like ruthenium are complex and strange because their redox potential changes drastically depending on what they are bonded to. For instance, Awasabisah has been studying the chemistry and electrochemistry of ruthenium nitrosyl porphyrins. He determined that when an electron is added,



Molecular structure of the heme-drug adduct obtained by X-ray crystallography

nitric oxide (NO) is lost and leaves behind the ruthenium porphyrin complex. Nitric oxide plays a role in reducing blood pressure. In addition, ruthenium-NO complexes have different redox potentials depending on whether the NO molecule is linear or bent.

Moving forward, Awasabisah plans to publish the findings of his synthetic heme-quinoline complex research, a finding he’s already shared at the American Chemical Society’s annual conference this past summer, virtually, of course. He also plans to test the heme model compounds with other antimalarial drugs like hydroxychloroquine and artemisinin as well as shift to testing with iron heme complexes, which he hypothesizes will function like the ruthenium compounds. He also plans to test how organic drug compounds that include fluorine

could serve as better antimalarial drugs.

Ultimately, creating better anti-malarial drugs is not an abstraction for Awasabisah. Growing up in Ghana means being surrounded by the real impacts of the disease. Nearly half a million people, worldwide, mostly pregnant women and children, die from malaria each year. For him, the issue of drug resistance is personal. He had malaria as a college student and nearly died of it. After taking two other ineffective drugs, he luckily was prescribed one that took hold and saved his life. “That was where I began thinking about drug resistance, I began thinking about malaria.” Malaria is a serious threat and Awasabisah wants his life’s work to contribute to society’s well-being. “I’ve seen it firsthand. I’ve had it. I know people who have had it and died. I almost died from it. So I have a special interest

### Continued from page 3

2019, she has already included FSU students in her research. An undergraduate student is working with her on the Shannon Grant and interning at UMass Medical Center’s law and psychiatry program. Drawbridge has also taken on an honors student who

will be using some of her data for a thesis project. Finally, a psychology student is contributing to her educational training by working with on-going projects in Drawbridge’s research lab.

Ultimately, for Drawbridge, “when somebody becomes

involved in the justice system it needs to mean something besides punishment if we hope to improve public safety. We can’t just expect that punishment is going to change behavior. We need to drive home this rehabilitative stance within our justice system.”



# Knowledge Is in the Space Between People

BY ELISE TAKEHANA

While the field of critical literacy is broad and scholars hold differing definitions and priorities, for Katharine Covino, critical literacy strives for a deep reading of a text that goes beyond the words on the page and to the presence of the person, of “how they are in the world.” It requires that one examine the perspectives represented and their hierarchy. How is privilege, power, and marginalization at play in the text and in the world? “Critical literacy has a very disruptive quality, and part of its purpose is to raise awareness and disrupt the status quo.”

Covino’s journey to critical literacy began first in gender studies with gender inequality as it manifests in literature. She found herself asking, “Why are some voices privileged and some aren’t? Why is it fringe to take three women in literature classes, but all the other classes are men and literature classes?” Several degrees later, critical literacy provided a conceptual framework for her to practice these modes of inquiry on topics beyond that of gender.

While Covino’s first love was gender in literature, that certainly hasn’t limited her interest in applying critical literacy to other questions of social privilege. She and her collaborator, Lyndsey Benharris, are in the midst of analyzing qualitative data on a critical discourse analysis of representations of Christopher Columbus in children’s picture books intended for Pre-K through grade 2 readers. While COVID has temporarily paused their analysis of the data collected (their chosen qualitative methodology relies on coding data collectively and simultaneously) their initial findings show a “deification of Columbus and very little if any attention to the

native indigenous people that he encountered.” Other emerging themes that will guide their coding include instances of “naming and claiming” and representations of what appears “civilized.”

As a teacher of teachers, these findings propel Covino to ask “What do you do about that as an educator? Why is that representation so uncritical?” When the imagery of such picture books clearly demarcates Columbus as a divine hero whose image dominates the page space, young children quickly identify Columbus as the “good guy.” For Covino, it is a call that “we need to help critically tell the story.”

That work in children’s literature is not only theoretical for Covino. She and Elizabeth Englander recently contracted a co-authored children’s self-help book on how to use and not abuse digital technology when one becomes a proud cell phone owner. They are also proposing an adapted version for five to seven-year-old readers on responsibly using others’ technological devices, this time with rhyme rather than sarcasm. The pair also recently released *The Insanely Awesome Pandemic Playbook*, a funny, irreverent chapter book for young readers (ages 8-11), which entertains while educating kids about keeping up their mental health, using screens wisely, and staying connected with friends and family during the most destructive pandemic in our lifetimes.



Her four most recent essays focus on another branch of her research: praxis, or connecting theory and practice for teachers learning how to teach. The co-authored book chapter “Shining a Light on the Monster: Identifying and Interrogating Toxic Masculinity” reflects her deep interest in issues of gender Working together with Dr. Annamary Consalvo, a colleague from UT Tyler and a former professor at FSU and Ms. Natalie Chase, a recent FSU graduate now teaching English in North Carolina, Covino reflect on the pairing of *Lord of the Flies* and *The Chocolate War*. They offer teachers ways of overtly addressing the underlying theme of toxic masculinity in the paired texts through different pedagogic activities and assessment. Similarly focused on praxis, though markedly different in content, is a recent journal article she co-wrote with a Dr. Cara Mulcahy, a colleague from Central Connecticut State University, entitled “Social Justice in the Classroom: How Critical Literacy Can Help Teachers and Students Move Toward Empowerment, Equity, and Transformative Change.” Covino and Mulcahy offer teachers ways of using critical literacy to validate multiple perspectives, dig deeply into texts and discourse, and raise awareness of issues of power, privilege, and marginalization in schools and beyond. For instance, a teacher could use problem-posing or interrogative questions to help students investigate the beliefs

and positions of authors, texts, and discourse.

For Covino, research and teaching are inseparable and supporting students, and supporting teachers walk hand in hand. She recently co-authored a book chapter, "Rowing Together in the Same Direction," with FSU alumni – Garrett Zecker, a veteran teacher and Hannah Britten, then in her first year of teaching. The chapter discusses the value of a supportive community of practitioners when practicing culturally responsive teaching. While culturally responsive teaching is widely discussed, it's not yet widely practiced. Covino's contribution discusses the practice of collectively establishing norms in a classroom, which means teachers must know their students because "the person who's coming to you, the identity of the student in the classroom, will intersect with and shape the classroom norms."

Ultimately, culturally responsive teaching pushes against the deficit model of teaching by recognizing that students already arrive with their own knowledge and experience. As far as Covino

is concerned, "everybody comes in rich with experiences. Everyone comes in as a scholar. The experience that you come in with should not be discounted." That level of individualized and empathetic pedagogy is hard to maintain, but that is where community comes in. "Teaching is so demanding. What sustains you is building relationships with teachers at other levels to enrich your practice for the benefit of the students."

Covino's research aims to be helpful to teachers, including herself. Her book chapter, "It's Just Not What I Thought it Would Be," combined a group of pre-service teachers and early career teachers to guide revisions to how she designed and taught various courses in the middle and secondary licensure concentration. What she found in interviewing student teachers and novice teachers was that the concepts covered in Special Methods classes don't always happen in the classroom. "If we talk about how important it is to reflect, then we have to make sure that they're actually getting a chance to reflect, otherwise it's just a word. It doesn't

mean anything." To truly prepare students, professors training teachers must create and foster an approach that integrates the university classroom with the middle or high school classroom. That is to say, the university program must align with and support the work of local middle and secondary schools, teachers, and students.

Covino currently has two scholarly projects in the works. One is a research project with Dr. Kori Ryan aimed at reading university students' poetry through the lenses of anxiety, stress, and trauma - as directly reflective of the experience of attending college during Covid. The other is a book chapter proposal about selecting LGBTQ+ novels in ways that de-tokenize the choice and instead adopt the books for the same reasons as any other ELA book would: to meet curricular standards. In this case, she proposes using Allison Bechtel's *Fun Home* to teach the rhetorical situation. "My young adult reading list is unorthodox and I'm happy to own it. I don't want any straight, white men as narrators. I want to privilege underheard voices."





## Events

Please send details of events related to faculty research or intellectual life to [etakehan@fitchburgstate.edu](mailto:etakehan@fitchburgstate.edu) for inclusion on the Center for Faculty Scholarship's calendar and newsletter.

12 07 20

12:30 PERC 208

EB Caron presents her talk "Identifying Therapist Strategies that Predict Early Childhood Intervention Outcomes" as a part of the FSU Speaker Series.

02 01 20

12:30 PERC 208

Katharine Covino and Cara Mulcahy (CCSU) present their talk "Social Justice in the Classroom" as part of the FSU Speaker Series.

02 03 21

Deadline

Requests for funding for summer 2021 MSCA professional development activities due. Please send proposals to Deresa Webb at [dwebb5@fitchburgstate.edu](mailto:dwebb5@fitchburgstate.edu).

03 01 21

12:30 PERC 208

Zachary Miner presents his talk "Modest and Embarrassment in Medical Settings" as a part of the FSU Speaker Series.

03 15 21

Deadline

Requests for funding for fall 2021 MSCA professional development activities due. Please send proposals to Deresa Webb at [dwebb5@fitchburgstate.edu](mailto:dwebb5@fitchburgstate.edu).

04 05 21

12:30 PERC 208

Peter Staab presents his talk "Same Score Streaks in Baseball: What are the Odds?" as a part of the FSU Speaker Series.

05 03 21

3:30 PERC 208

Michael Hoberman presents his talk "Don't Know Much About Theology: The Case for Building Religious Literacy into the University Curriculum" as part of the FSU Speaker Series.



## From the Co-Coordinator, Eric Budd and Elise Takehana



As we find ourselves at the end of an unusual semester, we hope that you will all have some well deserved rest and a bit of calm. The social distancing though did give us the joys of having such well attended talks! We've certainly enjoyed seeing so many in the audience at the book talks, digital humanities colloquium, and the speaker series. Hopefully at least that

part of video conferencing is here to stay, even if most of us are dying to get back in the classroom, face to face with our students.

While the social distancing, closures, and lockdowns have been a boon to some faculty members' research efforts, for others, research seems the last thing on their minds! From some the video conferencing has meant they could share

their work more broadly or attend conference they never would have otherwise. For others, COVID halted plans to do site research, visit important archival collections, or continue gathering data. We've all had to cope with new circumstances. We would love to hear from you about how the events of 2020 have affected your research, good or bad.

As the semester winds down, you might consider taking a moment to narrativize your experience as a teacher and a researcher during the pandemic for the COVID-19 archive collection that the Fitchburg State University Archive and the student newspaper, *The Point*, has created (for more information go to, <https://fitchburgpoint.com/contribute-to-the-covid-19-archive/>). This could be a wonderful way that you could contribute to our campus's historical record and provide illuminating narratives for future researchers looking back to this moment (and won't we all enjoy being able to look back on the pandemic as behind us!)

Enjoy the holidays and we'll "see" you in 2021!

## Research Live

[The Center for Faculty Scholarship](#)

Co-Coordinator: Eric Budd and Elise Takehana

Newsletter Staff: Kurtis Kendall

If you are interested in having your work featured in *Research Live*, contact Elise Takehana at [etakehan@fitchburgstate.edu](mailto:etakehan@fitchburgstate.edu)