



## Creating Spaces Where Students Feel Known, Safe, and Valued

BY ERIC BUDD

Within the first five minutes of my interview with Professor Danette Day, she uttered the phrase that perfectly captures her teaching style and the mission behind her research agenda. For Dr. Day, schools need to be places where students can feel known, safe, and valued. While those three words seem like a very simple goal, the failure of our educational system to deliver on them is what drives Dr. Day in both her teaching and her research interests.

Born in Germany to a German mother and an African American father, Dr. Day moved to the US at the age of four. Forced to give up speaking German, and having to adapt to a new culture at a young age fueled her interest in how people acculturate. While attending the Shirley Public Schools, Dr. Day found an environment where she truly felt “known, safe, and valued.” For her, the local library was also such a place.

Today, Dr. Day’s research examines both our schools and our libraries and seeks to find ways to make them more inclusive. She is currently conducting a study with Connie Strittmatter, our Strategic Projects Librarian, and Lorenzo Demalia, an FSU journalism student, which explores library use and perceptions of the library among underrepresented student populations. According to Dr. Day, “For me, the library was always a place that was so welcoming and free, I could walk out with tons of books, videos, and CDs.

It was a quiet and warm space. A library is a really special space.” By studying how under-represented students perceive the library, she hopes to find ways to ensure that all students will have the same positive associations with the library as she always had.



Inclusion, whether it is in the library or the classroom, is one of Dr. Day’s driving interests. As she put it, “Humans need interaction. Humans are built to be part of a community. Think about it, when we punish someone, we take them away from other humans. We need to be in communities.” In her classroom, and in her research, Dr. Day is constantly creating inclusive communities. Pretty much all of her research involves collaborating with different partners, because “that’s how we create change that is sustainable. There’s more excitement and joy when we collaborate.”

In addition to inclusion, mindfulness is another key component of Dr. Day’s teaching and research.



She recently wrote a \$3 million NSF grant on “Mindfulness-Based Inclusion Practices in Early College.” The two go hand in hand, because “mindfulness is the beginning of understanding who we are so we can do the work of creating inclusive environments.” With her emphasis on mindfulness, inclusion, and collaboration, Dr. Day is not just talking the talk, but also walking the walk to make sure that our educational system can fulfill its promise to help all students feel known, safe, and valued, so we can fully engage in the process of teaching and learning.



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

Faculty research and scholarship is our primary focus, but we have also sought to encourage more student research as well.

This is the second year that the Center for Faculty Scholarship has awarded two \$500 stipends to students conducting a faculty-student research project. These stipends are awarded to the students for conducting a research project in

the spring semester with a faculty advisor. Last year Elyse Clark (Geographical Sciences) and Hong Yu (Engineering Technology) sponsored students who collaborated with them.

Also in this newsletter, you can read about the research project Professors Jessica Alsup and Lindsay Parisi are doing with their students in Exercise and Sports Science. Student research and scholarship is invaluable in enabling our students to achieve their academic or professional goals. In future issues we'd like to highlight similar projects that are taking place across the campus, so please share the work you and your students are doing together.

In order to find out more about student research and scholarship across the campus, we recently sent a brief survey to Department Heads about the different opportunities their departments provide students to conduct research or scholarship, as well as what

barriers they see that prevent more students from doing such work. If you have any ideas on the subject, we'd love to hear from you!

Wishing you a happy and hopefully soon to be warm spring!



## SLEEP

the great emotional regulator

Why you actually should go to bed mad.

To see the importance of sleep in the processing of emotions, correcting of mood, and controlling emotional responses, you need look no further than a napless toddler. A toddler without a nap will often shift dramatically between states of desperate frustration, and intense silly giddiness. If you pull an all-nighter in preparation for an exam, you might notice that it takes very little to make you burst into tears, or overreact in anger. I study the neurological mechanisms of sleep-related emotional processing and regulation in two distinct populations: preschool children, and young adults who have suffered a mild traumatic brain injury (mTBI, or a concussion). Preschool children are first learning how to identify, understand, and regulate emotions, and this ability correlates strongly with both personal and educational success later in life. Individuals with a mTBI suffer from the loss of the ability to consistently regulate and control emotional outbursts, and are significantly more likely to suffer from mood and anxiety disorders than they were prior to the injury. Both of these populations also undergo drastic changes in sleep behavior and sleep quality. My research aims to examine how sleep plays a role in the development and maintenance of emotional regulation networks in the brain. And it turns out that the common belief that you should “never go to sleep angry” is terrible advice.



A VIRTUAL LECTURE  
by Dr. Laura Kurdziell  
Assistant Professor of Psychology  
Merrimack College



March 11  
12:30 – 1:30 PM

TO PARTICIPATE, GO TO:  
[meet.google.com/pgw-zagb-fcj](https://meet.google.com/pgw-zagb-fcj)

OR, JOIN BY PHONE:  
(US) +1 617-675-4444  
PIN: 735 574 678 4170

FITCHBURG STATE UNIVERSITY

This event is hosted by  
the Psychological Science department.

# Social Disadvantage and Managing Asthma

BY ELISE TAKEHANNA

Melissa Dunn worked as an acute care pediatric nurse before she began teaching nursing courses. This role eventually brought her to supervising students at a school nurse's office. The experience of seeing the day-to-day care of asthma patients as opposed to her experience with the acute care of exacerbated asthma drove her to her dissertation research on the social disadvantages that affect care management in families with children suffering from acute asthma.



Unlike the hospital setting, daily care management brought to the fore the immediate home environment and socio-economic status of a family and how that affects their ability to care of a child's needs. Dunn asked herself: "What sort of resources to families need to be successful and have the support that they need? How do the types of insurances people have effect their ability to treat their child? What social supports that are necessary?"

Dunn's qualitative study involved interviewing legal guardians of children suffering from acute asthma. Because her recruiting was interrupted by the pandemic, she needed to make significant changes. Before the pandemic, she recruited from clinics and community sites, and developed partnerships with healthcare providers who would refer patients to her study. She focused on sites with high Medicaid use as an income indicator. But as offices closed, she turned to social media to recruit participants. Her in-person

interviews turned to telephone interviews and she could not control for areas of high Medicaid use, but the pandemic brought her to include participants from all over the country.

Dunn employed the family management style framework for her study. First devel-

oped in the 1990s and since widely used in the field, this framework looks at patterns of family management in the daily life of caring for a child suffering from a chronic disease. It was developed to re-

search normalization, which, in this case, means a point when a family caring for a child with a chronic condition might process the changes in their lives necessitated by caring for the child and "they may or may not get to this place where they feel normal," says Dunn. Following multiple qualitative studies, the framework developers identified patterns of management observed in family care. Dunn's background in pediatric made working with the framework very intuitive because she "could see the experience of working with families in that framework."

The framework takes into account economic status, education level, income, family makeup, and home environment among other factors, but Dunn focused on contextual. While the original framework includes resources, social networks, and care providers and systems as contextual factors, Dunn expanded this area to include questions regarding the home environment. While the

framework was initially developed with child asthma patients, they were mixed in with children suffering from diabetes, rheumatoid arthritis, and other pediatric conditions. "There wasn't anything in the literature, specifically looking at the contextual factors and asthma, that was the gap."

To customize the framework to the specifics of asthma, Dunn added additional questions about a patient's environment including factors such as pets, dust, and heating systems. "For asthma it's really complex because all of these things are interconnected. It's not just one factor. It's a number of things that can affect the family's ability to manage a child's asthma and have good asthma outcomes."

Dunn has finished analyzing her data and will defend the dissertation in March. While she is not able to share her findings prior to her defense, Dunn did share that those findings could have implications of care policies because they indicate necessary resource not currently well supported. She is interested in expanding her theory beyond specific conditions to determine if contextual factors she found significant for asthma patients should be considered for inclusion in the general framework.

In the future, Dunn would be interested in digging deeper into her findings and using the framework to study other conditions. That curiosity is what brought her to doctoral study. "I see problems that I don't know how to address. And I have questions that I don't really know how to answer." As a Fitchburg State alumnus, herself, Dunn is pleased to return as faculty and to continue researching tough questions to uncover useful solutions.



# Modeling Same-Score Streaks in Baseball and Basketball

BY ELISE TAKEHANA

Mathematical models describe observable patterns, not just for the sake of accurately representing a phenomenon, but to provide a tool to answer questions about that phenomenon. Peter Staab and his co-author, Rick Cleary, spent the past year building a model for same-score streaks in baseball – that is, sequential games with the same-score for any one team and its opponent’s scores. Their article “Same-Score Streaks: A Case Study in Probability Modeling” will appear in *Math Horizons*, a journal whose mission is to publish mathematics research in ways that are accessible, compelling, and valuable to undergraduate mathematics students.

Cleary was invited to Fitchburg State in the spring of 2018 to present his work in sports math modeling, where he shared many examples of his past work, amongst them a question posed to him by

a journalist regarding whether or not a three-score streak has occurred in college basketball before and how rare such an occurrence might be.

“How rare is this?” asks Staab. “My first gut instinct says it’s very, very rare.” But Staab is a mathematician, so he experimented with the problem and reached out to Cleary the following summer with his findings and a suggestion to move to baseball first to shape a model, given baseball has the benefit of less variability in scores and more available data. More shocking still, Staab had not found any other studies on same-score streaks before. “I thought maybe people have done this before when



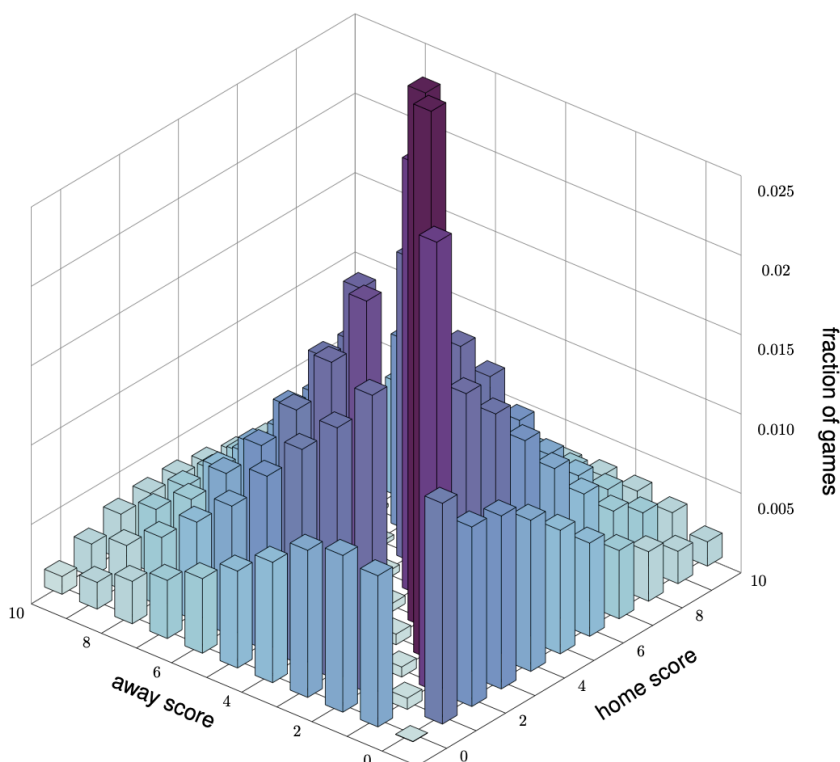
I started digging into this and I couldn’t find anything at all.”

While their model is quite specific, the general idea of modeling rare events is widely applicable to understanding and

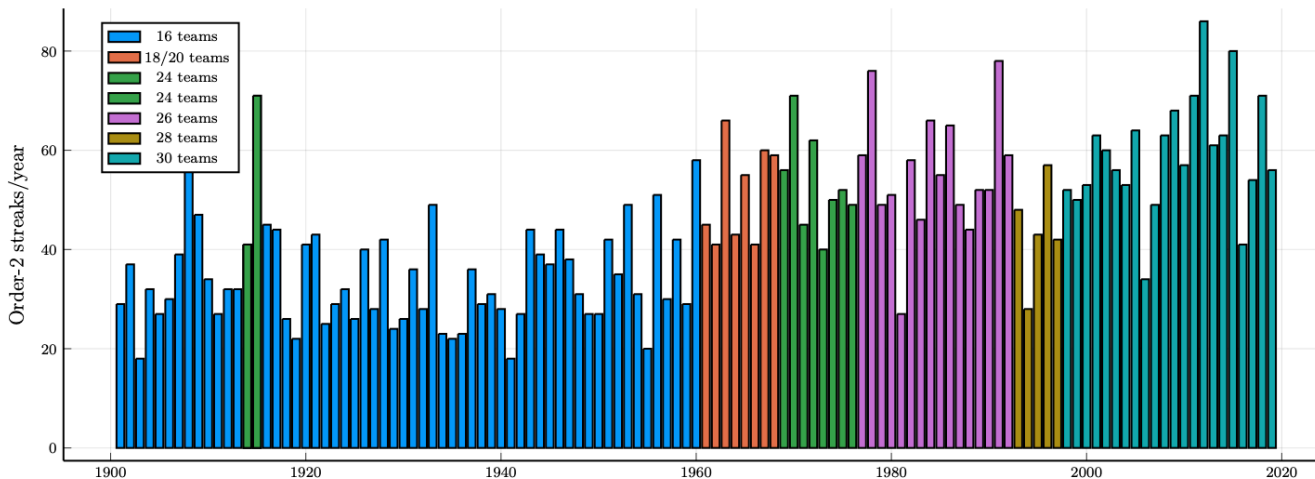
preparing for randomness

or risk. Rare occurrences, whether a four-game-streak in baseball, or a global pandemic, can become predictable with a well-designed model. The increased presence of academic research on quantitative analyses of less “serious” topics has seen a sharp rise in the past couple decades. “Sports research has always been more hobbyish, I would say, until the last couple of decades,” says Staab. “Now your laptop can run all this stuff pretty easily. 200,000 games is not a big data set anymore.” This also means that the research is not as heavily dependent on grant funding as it would have been just 20 years ago. Beyond increased computing power, the growing market for data analysts has led to more graduate programs in the field and those analysts go on to work in all sectors of the economy including sports. For instance, Staab adds that “*Moneyball* in baseball, or the statistical analysis of players, is going through every single sport these days. This has attracted a lot of [academic] interest.”

Building an accurate model necessitates an awareness of the particularities of what it is you are modeling. For instance, in baseball, teams will play the same opponent two or three times in a row regularly in the course of a season. As Staab and Cleary refined their



Bivariate Weibull distribution of historic run distribution



Number of order-2 streaks in a given year from 1901 to 2019

model, part of that work was in accounting for this reality. They tested a “simple schedule” with teams randomly playing a different team each game and a “realistic schedule” with back-to-back games with the same opponent. With the “realistic schedule,” the occurrence of streaks increased by about 50%, allowing for a much more accurate model than the “simple schedule.”

For their model, they first tried a binomial distribution, but they eventually settled on the Weibull distribution, a function developed some 100 years ago. Such functions were typically made to model a specific phenomenon but often become useful as models for many other unrelated events. The Weibull distribution has been used to model the strength or brittleness of metals, for instance, and is a commonly used distribution for predicting failure. Because it is an extreme value distribution, it is helpful for predicting extreme events like economic collapse, earthquakes, or four-game-streaks in baseball.

Ultimately, Staab and Clearly found that three game same-score streaks in baseball are fairly common, perhaps 1-3 times a season, but four-game streaks have occurred only three times in the 120 year of baseball history that they studied. In fact, they didn’t even think to look for four-game streaks, but there they were, in overlapping three-game streaks.

Once they were able to build a model that fit the data well for low-order streaks like 3-game-streaks, they could then use that model to determine the likelihood of future high-order streaks. Fitting that data ultimately means comparing the actual known baseball score data to the predicted scores and measuring differences between them, but perfecting a model eventually reaches a point of diminishing returns. “I’ve had a couple of ideas about how to tweak the model but they make the model much more complex, which sometimes doesn’t make it more useful. Even if it’s improving it a little bit, are you going to get that much more different results?”

While the paper forthcoming this spring is on baseball score-streaks, Staab and Clearly have returned to the original question of how rare a three game same-score streak might be in basketball. They have begun their work looking into modeling basketball using NBA scores and found that there has not yet been a three game same-score streak in NBA history. They are now looking into whether they have enough college basketball data to use with their model. With a good basketball model, they will run simulations that compare college basketball and the NBA, but basketball scores have more variability, college games are shorter than professional games, and the variability in skill level is greater between college teams and the NBA. These will result in interesting differences in the standard deviations as the model moves between sports and levels within a sport. They hope to publish their basketball findings in the *Journal of Quantitative Sports Analysis*.

*“The goal of my project is to evaluate the impacts of road salt applications on the water quality of the Nashua River. I have an undergraduate student working with me, and in the fall we installed six sensors in the Nashua River that continuously record salt levels in the water. We also collected 60 soil samples adjacent to the river and road crossings over the river. The student is currently analyzing the soil and water data and [we] will present our research at the Northeastern section of the Geological Society of America conference this March.”*

*~ Dr. Elyse Clark, Geographical Sciences*

# The Complexities of Latino Identities

BY ELISE TAKEHANA

When Karina Bautista first arrived in the United States, she found her time in the New York City public school system disorienting chiefly because she seemed to have no place, no representation in the curriculum, particularly in history. “My elementary and secondary experience was more like an intense training in how to become a social and civic ghost in society. My impression was that Latinos were not really part of the equation of knowledge in this society.”

That early experience evolved into an intellectual interest in the mechanics of groups, identity, and culture, which she first explored through the social sciences and later through literature, language, and semiotics, markedly “semiotics as a way of breaking down and understanding the mechanics of cultural behavior.” During her doctoral studies she focused on US Latino literature and the Latino identity through essays but found that postcolonial theory ultimately disappoints the subjects of decolonization. “It is one thing to [analyze cultural difference] at the linguistic level and another thing to go into the streets and see how it plays itself out. That is where postcolonialism as social tool fails.”

For Bautista, an overarching collective Latino identity is a gross simplification of the diverse positions Latinos have taken to imagining their identity. For instance, Jesús Colón, a Puerto Rican writer, socialist, and labor activist, focused his attention on the Latino working force globally. Julia Alvarez narrowed in on the Dominican diaspora and its resulting limbo state from which one might resurrect oneself through writing. And, Richard Rodriguez, a Mexican-American, rejected the Latino identity as a “an

obstacle for Latino integration to American society.”

Clearly, there is no Latino monolith, which Bautista explored in her recent conference presentation “La complicidad del ensayo de Richard Rodríguez en el conservadurismo político de latinos en los Estados Unidos” on the political conservatism of Latino subgroups. “There is a component of Latin American society, regardless of where you from that addresses issues of preservation at any expense that we have to explore. Just because you happen to come to the United States for economic reasons, doesn’t mean that you are going to identify with the working class.”

Highlighting the multiplicity of one’s identity is a great challenge, one that Bautista sees as affecting the Latino community in very specific ways. “We do a very poor job in understanding hybridity in the United States and in the next 10-20 years, we will have to enter a new phase of challenging our concept of hybridity.” While this is true for those of all ethnic backgrounds who live in a country that has created a “black and white dichotomy,” Latinos, with their “constant traffic of newcomers” have a distinctly different conversation about their place in the United States because they have first, second, and third generation immigrants all living in the same communities.

Bautista is particularly concerned with how young Latinos navigate understanding racial and ethnic identity because, without the knowledge of their own history, they turn to those of the African



American community. “Young Latinos, for very good reasons, feel that the Latino community does not recognize their racial identity. Even in the Afro Latino community, rather than find out what is

happening from the Latino perspective, they feel that they need to borrow the ideologies and the know-how of the African American community to interpret their own.” Although the Latino community is rich in afro-heritage, as can be seen in its music, it has done a poor job in analyzing and representing that component of its heritage outside the cultural domain. For some, the reason for this lack of information are rooted in racism, but Bautista suspects that there are other factors at work as well.

Recognizing the many cultural identities and perspectives within the US Latino populace is not the only problem. There is a need for a larger reckoning in Latin America, a community that has “not really worked on their racial consciousness. We have really marginalized our black community.” For Bautista, a hybrid identity is challenging because “you are becoming that other in the process of engaging it, you. If you explore the poetry of Nicolás Guillén, an Afro Cuban poet, he talks about the psychology of being both, and that’s not easy because you have to love both sides of yourself, even the person that enslaved your grandfather. You are both, and that psychology is extremely hard to process.”

When considering racial identity, one must account for many other complex components that



might motivate group identity like gender or economic status. In her recent conference presentation “Desentrañando la problemática del ‘x-ismo’ en la identidad afro-latinx” at the Congresos Internacionales de Literatura y Estudios Hispánicos, Bautista considered the complexity and inferences around the use of x in Latin-x. Spanish is a language operating with different gender agreements, not just masculine and feminine, but also neutral and hybrid structures to describe the world around us, she says. The distorting construct of Spanish as a “sexist language” that “needs to break away from its binary female/male tendencies”, has led to the replacement of

the ‘o’ in Latino for the ‘x’ in Latinx. This practice originated in American society, particularly in academic sectors working on issues of gender. The underlying assumption is that the use of ‘x’ is an act of linguistic justice that can push the Spanish language towards more neutral practices, eradicating in this way the assumed and “unique” sexism in Latino culture. This linguistic justice of x, however, doesn’t seem to account for the sexism in societies with a neutral language, like our English-speaking American society.

The language and research around identity and culture has evolved at a quick pace for the past twenty years, so there is no shortage

of social identity mechanisms and labels to examine. Bautista is currently analyzing the use of BIPOC (Black Indigenous, People of Color). “The Latino has disappeared completely on this one and it assumes that indigenous people identify themselves from a racial perspective, and that is not necessarily the case,” she says. She is also writing an article on the poetry of Elizabeth Acevedo, and her representation of the Afro Latina and she is developing an edited collection with colleagues from the University of Puerto Rico and the University of Virginia, Richmond on the issue of race in Latin American and the United States.

## Research in the Time Corona

BY ERIC BUDD

What do you do when you are all set to start a new research project, but then a pandemic hits and social distancing makes your research design no longer viable? That is the predicament that faced professors Jessica Alsup and Lindsay Parisi last spring. They were all set to start a new project examining what factors make some fire fighters more efficient than others, when Covid-19 made it impossible to use live subjects. Additionally, they needed to find a project for their students in Exercise and Sport Science. Rather than let Covid defeat them, they decided to turn it into their case study.

Professors Alsup and Parisi are exploring the impact of Covid-19 on physical activity. Specifically, their research is analyzing whether the pandemic has influenced individuals’ ability to participate in either aerobic exercise or resistance training exercise, as well as its impact on

overall body weight. They wanted to ascertain what barriers to physical activity were caused by Covid-19. For example, in the early days of the pandemic all exercise facilities were shut down, and later re-opened but with reduced occupancy. Also, some people don’t feel safe even hiking outdoors, and for others financial considerations or increased familial responsibilities have made it impossible to carve out time for physical activity. Space constraints can also prevent some people from being able to exercise if the pandemic closed down their usual options. Professor Alsup also noted how stress and depression can have a big impact on physical activity. As she pointed out, “Some might use it to relieve some of what is going on, while for others it might lead them to not partake in healthy activity.”

By using their students in Exercise and Sport Science in their study, Professors Alsup and Parisi found

a perfect pool of case studies for their study. Additionally, they also found a project their students could work on when the pandemic closed down their internship opportunities. Furthermore, according to Professor Parisi, “Getting the students involved with research, and letting them know about research in our field, opens their eyes to whole new possibilities.”

Professors Alsup and Parisi have really enjoyed the experience of working with the students on the project, and with one another. This is the third research project they have done as co-researchers. They’ve found that working together lightens the burden, and provides someone to bounce ideas off of. While Covid-19 can be seen as a barrier to both physical activity and research, the work of Professors Alsup and Parisi shows how it can also create new opportunities for both!

*“We designed a device for the COVID-19 pandemic and finished it in Dec. 2020. Actually, we can load [data] to our website and encourage others to study during the pandemic. Please click on the link and have fun. [https://www.youtube.com/watch?v=zMt67\\_jBGo&feature=youtu.be&ab\\_channel=KentHongYu](https://www.youtube.com/watch?v=zMt67_jBGo&feature=youtu.be&ab_channel=KentHongYu)”*

*~ Dr. Hong Yu, Engineering Technology*

# 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.

02 22 21

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 24 21

3:30 Google Meet

CFS panel "Making Connections to Facilitate Your Research" featuring Ben Levy, Adem Elveren, David Weiss, Danette Day, Katy Covino, and Rala Diakite.

03 01 21

12:30 PERC 208

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

03 03 21

3:00 Google Meet

Artist Jean-Luc Alexandre presents a virtual gallery talk to discuss his exhibit "Raging Youth: Installations."

03 11 21

12:30 Google Meet

The Psychological Science department hosts Dr. Laura Kurdziell (Merrimack College) for her talk "Sleep, the Great Emotional Regulator."

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).

03 18 21

4:00 Google Meet

Women in the Arts features a wide variety of expressions by women-identified artists, including music, dance, poetry, acting, visual art, film, and more.

03 25 21

3:00 Google Meet

Professor Rala Diakite (Humanities) leads a discussion of Clash of Civilizations over an Elevator in Piazza Vittorio by Amara Lakhous.

03 25 21

3:30 Google Meet

Professor Lee Badgett of UMASS Amherst's Dept. of Economics present her talk "The Economic Case for LGBT Equality."

03 29 21

Deadline

Abstracts for the 4th Annual Faculty Research Symposium are due to [centerforfaculty-scholarship@fitchburgstate.edu](mailto:centerforfaculty-scholarship@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.

04 21 21

3:30 Google Meet

Book launch for Rala Diakite and Matthew Sneider's (UMass Dartmouth) volume The Eleventh and Twelfth Books of Giovanni Villani's New Chronicle.

04 27 21

3:30 Google Meet

Faculty who received funding from the Deans' Anti-Racism Award will present their projects and their impacts on the students and campus community.

04 28 21

3:30 PERC 208

CFS Colloquium on inequality featuring the work of DeMisty Bellinger-Delfeld, Adem Elveren, Christa Marr, and Viera Lorencova.

04 30 21

Deadline

Proposals for the 3rd annual Faculty Research Colloquium and Special Projects Grant applications are due.

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.



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## Research Live

The Center for Faculty Scholarship

Co-Coordinators: Eric Budd and Elise Takehana

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

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