SAS Center Annual Report 2021

Penn's hub for the integrative study of the mind, connecting researchers across our campus and with our community.

June 4, 2021

This is a report on the activities of the Mind Center for Outreach, Research, and Education (MindCORE) for academic year 2020-2021. MindCORE was officially created in the fall of 2017 as one of the School's key endeavors under the "Mapping the Mind" initiative identified in the School's strategic plan, Foundations and Frontiers. Joe Kable, Baird Term Professor of Psychology and Marketing, assumed the role of Director for a four-year term beginning on July 1, 2019, following Sharon Thompson-Schill, Christopher H. Browne Distinguished Professor of Psychology, who served as the inaugural faculty director for two years.

Mission

MindCORE is an interdisciplinary effort to understand human intelligence and behavior. Research programs in MindCORE bring together faculty with diverse approaches to the study of the mind, from disciplines in the Arts & Sciences ranging from Psychology, Biology, Cognitive Science, Neuroscience, and Physics to Economics, Linguistics, Political Science, Sociology, and Philosophy; and they bridge to centers and departments in Medicine, Wharton, Engineering, and Annenberg. MindCORE is the home of several undergraduate and graduate programs that are educating the next generation of students of the mind. MindCORE promotes cutting-edge research, increases the broader societal impact of new knowledge about human behavior and decision making gained from current research, and influences public policy and education through coordinated outreach programs.

Most Significant Accomplishments & Developments This Year
Provided new financial support to a larger group of undergraduate student researchers.
- Applied for and was awarded an NSF REU grant to offer 10-week summer research internships to 8 non-Penn underrepresented students. The program received 365 applications in FY21 for 8 spots.
- Offered work-study top-up grants to faculty to incentivize hiring student workers in research-related positions through the Penn/Federal Work-Study program. These grants bridge the gap between the Pennsylvania/Federal minimum wage of $7.25 per hour and a "living wage" of $15.00 per hour, in order to encourage and allow financially aided students to work in research settings. In FY21 MindCORE provided grants to faculty for 7 students working in different labs.
- Accepted 3 additional students to the Gleitman Fellowship program in summer 2020 (for a total of 13 Fellows) using savings from pandemic cancelled events (seminars, catering, etc.) and program savings from offering an all virtual program. In a tumultuous

summer marked by racial injustice, MindCORE offered Gleitman students a purpose but also space to discuss current events and support student emotional needs during a difficult time. (See student names and research projects in appendix.)

<u>Offered virtual programming focused on improving connection among, support for, and understanding of our diverse community of scholars.</u>

- Hosted a popular book club comprised of faculty, staff, postdocs, and students who read about and discussed implicit bias while reading "Blindspot: Hidden Biases of Good People" by Mahzarin Banaji and Anthony Greenwald.
- Offered one-on-one data science tutoring sessions for researchers seeking help with problems in their data analysis. The 20-minute sessions were used 21 times during the year.
- Launched a near-peer mentoring program, STAMP[1] (Step Ahead Mentoring Program) that offered year-long mentoring pairings and guidance to 28 mentees and 26 mentors.
- Partnered with Brainspace[2] on weekly virtual coffee breaks using virtual event space designed to resemble Goddard.
- Launched new PhDemystified Podcast[3]. PhDemystified invites faculty from the University of Pennsylvania to open up about the unspoken struggles of becoming a scientist. In their interviews, researchers talk honestly about imposter syndrome, facing rejection, asking for help, and more.

> *Thank you so much for checking in! Things went amazingly! Also, not only was Jeni [Stiso] nice enough to meet with me yesterday, she also met/helped me today. I cannot begin to relay to you how helpful the sessions were! Truly, thank you so much. Best, Veronica Fenton*

PhDemystified 2020-2021 Impact:
- 5 episodes published
- 363 downloads
- 7 projected episodes for the summer 2021

<u>Supported Online Research</u>

- Offered access to the Penn PCIbex Farm[4], which provides registered Penn users with an enhanced setup of the PCIbex platform for online experiments to increase accessibility and security of more advanced features, such as audio- and video-recording, as well as basic eye-tracking functionality via the WebGazer API---all fully integrated and ready to use for Penn users with an account.
- Provided Penn researcher access to Pavlovia[5] a place for the community of researchers in the behavioral sciences to run, share, and explore experiments online Though originally conceived as a repository and launch platform for PsychoPy experiments, Pavolovia's open architecture makes it possible to support other open-source tools, such as jsPsych and lab.js.

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[1] https://mindcore.sas.upenn.edu/mindcore-step-ahead-mentorship-program/

[2] https://pennbrain.upenn.edu/brainspace/

[3] https://www.listennotes.com/podcasts/phdemystified-mindcore-faC5oI_bzHm/

[4] https://upenn.pcibex.net/

[5] https://pavlovia.org/

<u>Successfully advocated for the development of a new SAS Data Science Class that will be offered in Fall 2021 with support from MindCORE</u>

MindCORE consistently heard from faculty from across disciplines of the need for a data science class focused on the cognitive sciences, targeted at beginning students, and outside of the often full SEAS-CIS offerings. MindCORE Education Committee members Katie Schuler (faculty, Ling) and Colin Twomey (MindCORE Fellow) agreed that they could co-teach a class based on the framework of Berkeley's open access [Data8](#) course[6] and this idea was championed by committee chair Florian Schwarz within his department. Data Science for Studying Language and the Mind (LING 172/ PSYC 215) will be taught this fall and is registered at full capacity with 80 students. MindCORE will provide the teaching salary support for Colin Twomey.

Adapted to Change Brought by Remote Activities: Challenges and Successes
<u>Seminar Series</u>

MindCORE continued to offer key programming remotely, such as the weekly Friday seminar series. Using the [CrowdCast](#) platform, the 20 talks this year reached 1500+ attendees. Originally structured along a theme of "Big Unanswered Questions of the Mind", the theme didn't provide the significant new audience we had hoped. That said, the 20 speakers (10 men, 10 women, of diverse backgrounds) garnered audiences that were larger than the typical in-person audiences in the fall, but trickled to fewer attendees in the spring, likely from "Zoom fatigue." The virtual format did allow for talks to be seen anywhere in the world, and there were significant financial and fossil fuel savings in having speakers present remotely. There were some challenges with the CrowdCast platform, most notably that speakers were unfamiliar with it, but nearly all of the talks were automatically recorded and are available for viewing on the [MindCORE YouTube Channel.](#)[7]

There are parts of the seminar series under the virtual format (simulcasting for off campus viewing, and recording) that will be retained in the coming year; and other parts (in-person campus meetings with collaborators and students) that were greatly missed (pizza!) that the program is eager to regain in a return to campus operations. (See appendix for full listing of seminar talks.)

<u>Other Challenges (Successes in new programming are listed in the previous section.)</u>

MindCORE offered some new virtual programming that never developed a solid audience, likely because with all classes and meetings occurring online, attending additional voluntary virtual events after long days on computers was simply not enticing. Programs that were tried in the fall but discontinued for lack of interest in the spring included:

- Dipping Into Data Science: These were 20 minute talks where undergraduates, graduate students, and postdocs could present a Data Science project, problem, or provocative

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[6] http://data8.org/
[7] https://www.youtube.com/channel/UC4vPc2FJ1A_Ax7F36Jf5gMA/videos

question they encountered in their research and share how they solved it. [8] After the talk, attendees could discuss, ask questions, and confer about any other Data Science problems they encountered in their own work. This seemed to be appreciated as a good opportunity for students to present their work, but the talks were poorly attended and the data often was so field-specific as to be not very transferrable to the broad scope of science covered by MindCORE. (Note: There does seem to be an interest for a place where students and trainees could practice giving talks to attendees which could be a good program offering for another campus center.)

- Seminar Series Journal Club: This was launched to coincide with the seminar series and give trainees an opportunity to read the speakers' work in advance of their presentation so they could ask informed questions during seminar. Various postdocs and grad students were asked to condense the work. Some of the sessions were robust, but some were poorly attended and awkward. These would likely work better if the same core group of trainees attended weekly and may do well with an in person (with food!) format when on campus operations resume this fall.

Successful virtual events were those that had a consistent weekly audience (book club, summer student cohort) or that featured break-out rooms that were collegial and engaging. Other previously successful in-person activities, which would have been offered in a normal on-campus year were abandoned because there were plenty of virtual experiences available from other Penn sources covering these needs. These included:

- Yoga – Free online yoga offerings were plentiful elsewhere.
- Writing Room[9] – GAPSA offered regular writing sessions and there were other free internet sources for virtual co-working spaces.
- Professional Development – The Penn Libraries, GAPSA, CURF, the Center for Teaching and Learning, and Biomedical Graduate Studies all offered excellent professional development sessions that were applicable to the MindCORE audience. Staff shared information about, and promoted, those resources and event with the MindCORE community, rather than duplicate them.
- Anti-racism and Bystander Training – Hollaback[10]
- Outreach activities were curtailed in the pandemic with no lending of items from the Science Library, or Pop-Up Science at the Museum events since the Academy of Natural Sciences was closed to visitors. MindCORE advertised the biology department outreach talks and also those of neighborhood resources (e.g., Heinz Wildlife Refuge) as well as the Penn Neuroscience Public Lectures[11] co-sponsored by MindCORE.

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[8] A list of the speakers and sessions is available here:
https://docs.google.com/spreadsheets/d/19HfD5lsCpIVDOFBVNKQ8Tx4olFOdWeRAyPRgvHZ0Gf4/
[9] https://mindcore.sas.upenn.edu/events/mindcore-writing-room/
[10] https://www.ihollaback.org/
[11] https://www.upennglia.com/publiclecture

Most Promising Areas of Research & Faculty Alignment

The Interconnected Mind Cluster Hire: MindCORE is hopeful that the Dean will approve either a search or the targeting of a senior hire to jumpstart the faculty cluster on the theme of "The Interconnected Mind" proposed at the beginning of the year. The core challenge of "the interconnected mind" cluster theme is mapping the relationship between individual minds and group behavior. How is the behavior of individuals shaped by phenomena at the social level, such as group differences and group structure? What aspects of the behavior of groups can be traced back to cognitive and neural processes acting within individuals and what aspects are only emergent at the group level? Tackling these twin questions, about how individual minds influence group behavior and vice versa, is central to understanding social behavior, social communication, and social decision-making.

Neuroimaging: Planning continues for the building of a new MRI research facility located at Pennovation and managed by MindCORE. This facility will provide expanded access for MindCORE researchers to the power of neuroimaging to reveal both the form and function of the brain, including interconnections and sequence of events during brain processes such as remembering, learning, and emotions. While the opening of this facility remains more than a year out, planning will continue for how to provide access to the greatest number of Penn researchers, including undergraduate students keen to get involved in neuroimaging.

MindCORE Fellows: This year MindCORE will launch the first new faculty member from the Fellowship program as Julia Leonard starts her position as an Assistant Professor of Psychology at Yale this summer. (See appendix for full list of FY21 Fellows and their accomplishments.) MindCORE also accepted the following three new Fellows who will start in Fall 2021:

- Linda Chang, PhD – Linda received her BA in Cognitive Science from Yale University where she explored whether non-human animals share human-like intuitions about fairness and equity. She completed her PhD in Psychology at Harvard University funded by an NSF Graduate Research Fellowship, examining the impact of context-dependence in social evaluation and choice. Linda's research investigates the psychological mechanisms underlying bias and discrimination in social decision-making. Her work aims to unpack why inequality persists in consequential contexts. She is interested in translating insights to create interventions that reduce harm and increase equity.
- Sam Clarke, PhD – Sam works at the intersection between philosophy and cognitive science. He's particularly interested in perception and the origins of abstract thought. Using the approximate number system as a test case, his work as a MindCORE Research Fellow will examine the distinctive features of perceptual processing in the mind/brain and clarify the ways in which primitive and prelinguistic numerical competences do/don't relate to the mature number concepts (most) adult humans have at their disposal. Before coming to Penn, Sam completed a DPhil in Philosophy at the University of Oxford in 2019. In 2017-18, he froze his studies at Oxford to take up a Jane Eliza Procter Fellowship at Princeton University. Before joining MindCORE, Sam held a VISTA Postdoctoral Fellowship in the Department of Philosophy and Centre for Vision Research at York University in Toronto.

- Tyler Knowlton, PhD - Tyler uses tools from Psycholinguistics and Psychophysics to ask what linguistic meanings are and how they're acquired. Before coming to Penn, Tyler received a PhD in Linguistics from the University of Maryland and a BA in Cognitive Science from Johns Hopkins University. His research focuses on logical words like "every" and "most": what do they mean, how are they acquired by children, and how do they relate to cognitive systems outside of language? To answer these questions, he makes use of psycholinguistic experiments with adults and children, psychophysical modeling of behavior, and corpus analysis of child-directed speech. A theme in this line of work has been that linguistic meanings can offer surprisingly precise instructions to cognitive systems and that the particulars of these instructions are shared across speakers. You can learn more about the details of his research here: tylerknowlton.com. Outside of research, Tyler is actively involved in public outreach. He previously chaired the Maryland Language Science Center's committee on community outreach and organized events aimed at introducing middle- and high-school students to the scientific study of human language and related career paths.

Research Initiative Support to SBSI, ILST, & SCEW

MindCORE continued to provide support to three interdisciplinary research initiatives. Details on the initiatives can be found in their appended reports. Each initiative receives total funding of $500,000 spread over 3 years. The FY21 funded initiatives included:

- Social and Behavioral Science Initiative – SBSI (Coren Apicella & Geoff Goodwin): An understanding of the human mind, both its intelligent capacities and limitations or biases, is becoming increasingly important to explaining how human social, political and economic institutions work. Social and decision sciences use contemporary theories of behavioral decision-making, neuroeconomics, networks, and social evolution to understand how individuals and groups make decisions. It considers how to address a real-life problems in an array of fields, such as social and public policy, law, education, business, and medicine. (Received final year of funding in FY21.)
- Integrated Language Science and Technology – ILST (John Trueswell & Charles Yang): Human capacity for complex language is unique within the animal kingdom, and psychologists have long appreciated how the languages we learn can shape our patterns of thought in subtle ways. Language science fosters collaboration between researchers in cognitive science, computer linguistics, psycholinguistics, and phonetics to drive research in language acquisition and use. This research aims to develop and improve language and speech technologies (e.g., automatic speech recognition, translation, and transcription). In addition, this research can develop computational tools to learn more about how the human brain works and how sciences understands social groups. (Received final year of funding in FY21.)
- Social and Cultural Evolution Working Group – SCEW (Erol Akcay & Gareth Roberts) - Since humans are fundamentally a social species, a full understanding of human cognition ultimately has to take into account the interaction of different individuals' minds with each other (Hasson et al., 2012). Cultural evolution is a crucial element in this enterprise of broadening the reach of cognitive science beyond the confines of single minds. The evolutionary feedback between culture and social structure is crucial in determining the

social landscape individuals find themselves in. The grand challenge in cultural evolution is to elucidate and integrate cognitive, social, and population-level mechanisms into a coherent evolutionary theory designed for culture from the ground up. SCEW is working on this. (In year 2 of 3 of funding.)

Outside Grants & Fundraising

Grants

MindCORE successfully applied to the NSF to be [funded][12] as an [REU Site in Social, Behavioral, and Economic Sciences] to support student programming and is currently looking into applying for federal funds to support outreach activities.

- Secured: NSF 19-582 Research Experiences for Undergraduates. (Award# 2050803): $366,000 for 3 years. Start Date: 05/01/2021. End Date: 04/30/2024. REU Site: Summer Research Experiences in Interdisciplinary Mind & Brain Studies. PI: Florian Schwarz, Co-PI: Joe Kable.

Gifts

MindCORE greatly appreciate the assistance of SAS Advancement and in particular Jean-Marie Kneeley in pursuing funding for the Center. Advancement secured a $10M gift in FY20 but this has not yet been publicly announced. For FY21 SAS Advancement has reported the following:

- Pending: $400,000 endowed gift to fund 2 undergraduate students annually in the College doing summer research focused on brains and behavior. This would be similar to the current Greenberg Fellowship that funds 2 students annually working on summer research on memory and the brain.
- Secured: $1.5M gift to endow one of MindCORE's Postdoctoral Fellows positions. Gift will be paid over 5 years.

Alignment with Emerging Academic Opportunity Themes of the School's Strategic Plan[13] and Inclusion and Anti-racism Initiatives[14]

MindCORE was created in response to the "Advancing Integrated Knowledge: Mapping the Mind" section of the SAS Strategic Plan and as such, many of the MindCORE initiatives were specified in that plan including:

- "These contiguous facilities will now be used to promote intellectual synergies and serve as a dedicated home for shared instrumentation and collaborative laboratory facilities."
  - Planning is underway for a new Brain Imaging Center at the Pennovation complex administered by MindCORE to support research in human brain function.
- "The School will establish a Neuroscience Council composed of faculty across the disciplines to propose additional targeted faculty hiring particularly where it will foster meaningful connections between the humanities, social sciences, cognitive science, and neuroscience.

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[12] https://www.sas.upenn.edu/news/mindcore-receives-national-science-foundation-support
[13] http://www.sas.upenn.edu/strategic-plan/emerging-academic-opportunities
[14] https://www.sas.upenn.edu/about/inclusion

Recruitment strategies will include cluster hiring and the appointment of senior faculty who build bridges across schools, including through the Penn Integrates Knowledge program."

- o MindCORE submitted a proposal for a cluster hire in May 2020 after a participatory process involving dozens of faculty. The theme of the cluster is "The Interconnected Mind". To kickstart this cluster, MindCORE hopes that either a search or permission to recruit senior faculty will be approved for the coming year.
- "SAS will also support post-doctoral "junior fellows" who will be recruited for their ability to work across disciples and with multiple faculty mentors."
    - o The MindCORE Fellowship program was started in response to this specific aim. This year MindCORE had 5 Fellows (Julia Leonard, Colin Twomey, Andrea Beltrama, Rista Plate, and Jessie Sun). The breadth and interdisciplinarity of the MindCORE Fellows' work is detailed in the appendix. After three years, the fellows program is beginning to establish a strong reputation, and early indications—for example, with Julia Leonard taking a faculty position in Psychology at Yale—are that the MindCORE fellows program is more than living up to its inspiration (e.g., the Harvard Society of Fellows and C.V. Starr Fellows at Princeton). MindCORE additionally supports postdoctoral fellows Daniel Yudkin & Kristopher Smith (SBSI), Martin Ip (ILST) and Raphael Ventura (SCEW) through the three funded research initiatives.
- "This initiative will also fund new opportunities for undergraduate research, especially in the summer."
    - o Ten Penn undergraduates will participate in the MindCORE Undergraduate Summer Fellows program this summer alongside 8 REU students, 3 ABCS-SUIP[15] students, and 2 Greenberg Fellows for a total of 23 funded undergraduate student researchers in 2021.
- MindCORE is also working to "strengthen relationships among departments, programs, schools, and disciplines" and "have a significant impact on undergraduate and graduate education" and to that end has begun to partner with other centers and departments on campus to provide collaborative and coordinated programming which thus far includes:
    - o Collaborated with CURF to co-present the Growing Up in Science/Behind the CV Series.
    - o Cosponsored all NGG (Neuroscience Graduate Group) Outreach events including the two popular public lectures that regularly have more than 300 attendees.
    - o Participated in the PSTEMA outreach group, comprised of faculty and staff from across Penn working on community science outreach.
    - o Partnered with CURF and REU programs on campus to provide coordinated professional development and other educational events to the 800+ collected summer research students. That partnership began in 2019 with four coordinated events, and will continue this summer.
    - o Partnered with the Brainspace on a weekly virtual coffee hour.
    - o Cosponsored the inaugural Neuromatch Academy[16] with a MindCORE Activity Fund grant.

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[15] Applied Brain and Cognitive Sciences Summer Undergraduate Internship Program (ABCS-SUIP)
[16] https://neuromatch.io/academy/

- o Promoted and supplied CrowdCast account for use by several other regular talk series, including the [Penn Vision Seminar][17], Penn Society for Psychedelics Seminar, Electronic Auditory Research Seminar (E.A.R.S.), and special events such as [CUNY 2021][18].

Inclusion & Anti-Racism

- Offered a new near-peer mentoring program, the MindCORE Step-Ahead Mentorship Program (STAMP) that matches undergraduate students with a mentor who is "a step ahead" of them and also at Penn as a graduate student or postdoctoral fellow. Provided mentors with a special training session with the Center for Teaching and Learning on inclusive mentoring.
- Added a required session on Inclusive Practices for all the MindCORE summer mentors.
- Focused the [Behind the CV] program on hearing from Black and other underrepresented faculty. Behind the CV: Stories from Faculty (a "Growing Up in Science" Event) is an event series about becoming and being a scientist. Faculty share their stories with a focus on the unspoken challenges of a life in academia. MindCORE is using the lessons learned from those sessions to design programs to break-down barriers for other underrepresented scientists.
- Launched a podcast, [PhDemystified], based on the lessons shared from faculty in the Behind the CV series.
- Hosted a weekly semester-long book club discussion on implicit bias for faculty, students and staff at Penn (and one emerita faculty who joined from Panama).
- Working with a group of graduate students and postdocs on a [DivE In][19] (Diversity and equity Initiative, a recruitment weekend, October 8-10 2021, in which undergraduate students from underrepresented groups in the Mid-Atlantic area will have the opportunity to come to Penn and learn about graduate school at Penn and the process of applying to graduate school more generally. This effort has over 20 organizers, including undergraduate and graduate students, staff, and postdocs, under the guidance

> STAMP Impact: 2020-2021:
> 28 mentees, 26 mentors
> Program evaluation survey results (n = 22):
> - 89% found the program helpful to their academic/professional goals
> - 89% were satisfied with their mentorship pairing
> - 84% extended their mentorship

> Behind the CV Impact: 2019-2021
> TOTAL: 16 faculty, 3248 YouTube views
> - Spring 2019: 6 faculty, 389 YouTube views
> - 2019-2020: 6 faculty, 1457 YouTube views
> - 2020-2021: 4 faculty, 1402 YouTube views

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[17] https://vrc.med.upenn.edu/vision-seminar-series/

[18] https://www.cuny2021.io/

[19] https://web.sas.upenn.edu/dive/

of MindCORE staff and faculty sponsor Angela Duckworth. DivE In has applied for funding from the Klein Family Social Justice Grant program in support of this event with MindCORE staff's guidance.

- Planning to offer affinity groups (Asian, Women, Black, Neurodiverse, etc.) for undergraduate and graduate students, postdocs, and staff to the programming for FY22.

As an interdisciplinary center crossing departments and schools, MindCORE is well positioned to be able to draw the number of participants needed to have meaningful, supportive, group discussions.

mind DivE In
Diversity and Equity Initiative in the Mind Sciences

Keynote | October 8

Angela Duckworth

Founder and CEO of Character Lab
Rosa Lee and Egbert Chang Professor,
University of Pennsylvania

Apply by June 15, 2021!
https://web.sas.upenn.edu/dive/apply/

Education: Links to Undergraduate Education, Graduate Education & the College of Liberal and Professional Studies

MindCORE is the home of the large Cognitive Sciences Major, and hosts a summer research experience for Penn undergraduate students. The Center also supports professional development sessions for graduate students and postdocs and is working to create links to other interdisciplinary programs at Penn. The primary undergraduate education programs to date include:

- Provides all staff support to the Cognitive Sciences Program and as such supported 149 students in the major in FY21, enrolling students in courses, year-round support for student registration issues, and social events. There has been a five-fold increase in students in the major since 2010. The year ended with an in-person, socially-distanced meet-up with Faculty Director Charles Yang, and staff Jessica Marcus in May 2021.
- Successfully advocated for the creation of a new course "Data Science for Studying Language and the Mind" (LING 172/ PSYC 215) that is pre-registered at full capacity with 80 students for Fall 2021 and will be co-taught by Katie Schuler, Assistant Professor of Linguistics, and (former) MindCORE Fellow Colin Twomey (whose teaching salary MindCORE will cover).
- Offers an Undergraduate Summer Fellowship Program for Penn students working with MindCORE faculty. The program is a full-time, paid 10-week Fellowship where admitted students work with a faculty mentor. The program offers weekly journal club-style meetings and seminars, ethics and communications training, ongoing mentoring and professional development throughout the summer, and a final research presentation. The summer 2021 program received 124 applications for 10 spots (up consistently from 77 in 2020, 44 in 2019, 60 in 2018). Two financially-aided Penn students will also receive housing support this summer.

Long-term Leadership & Succession Planning

MindCORE is committed to leadership development at all levels and provides the following opportunities to members of our community:

- MindCORE-funded Postdocs guide programming decisions for MindCORE professional development events.
- Junior faculty are offered positions on low-work, high-visibility committees, such-as the MindCORE seminar committee, that provides a valuable leadership opportunity and contact with visiting speakers but only requires a few hours of work per year.
- Mid-career faculty are invited to join committees to review and recommend MindCORE Fellowship selection.
- The MindCORE subcommittees for Outreach, Research, and Education are comprised of junior and senior faculty along with postdocs and grad students.
- New executive committee members are invited to join based on their interest in the area of concentration (outreach, research, and education) and MindCORE involvement. Typically only tenured senior faculty are invited to this time-intensive and compensated leadership role. This year will see the addition of Russell Epstein of Psychology who will assume the role of Associate Director for Research from Nicole Rust.
- Secession planning is handled by the Dean's Office who selects the faculty director. Current director Joe Kable has two years remaining in his current term.

Outreach: Enhancing Faculty and Student Diversity

- This year MindCORE will offer 11 underrepresented undergraduate students from outside of Penn 10-week research opportunities as part of the new REU program (8 students) and ABCS-SUIP program jointly funded by MindCORE, the Wharton Neuroscience Initiative, and MINS to run alongside PSOM's main Summer Undergraduate Research Program (3 MindCORE-funded students). All students were selected from the REU pool of applicants in 2021 that was comprised of 365 students.

> 2021 REU Applications:
> 366 applications
> - 176 students identifying as BIPOC
> - 295 female, 70 male
> - 124 students identifying as either first generation, low income, veteran, or disabled (or multiple)
> - 8 applicants accepted offers for in-person program Summer 2021
> - 3 applicants accepted into ABCS-SUIP Program through PSOM but funded by MindCORE

- The MindCORE Step-Ahead Mentorship Program (STAMP) matched undergraduate students with a mentor who is "a step ahead" of them and also at Penn as a graduate student or postdoctoral fellow. Based on the behavioral science of mentorship, the goal was to create a safe space for mutually beneficial relationships and honest discussions about issues students face entering grad school and the workforce. MindCORE provided training to mentors on the unique needs of underrepresented Students.
- A number of other MindCORE programs already mentioned earlier in this report (Behind the CV, PhDemystified, book club, DivE In etc.) are focused on diverse student outreach.

Areas of Attention: Increased Costs and Norms for Paying Student Workers
The Dean's Office should be aware that the cost to fairly and equitably pay student workers and researchers has gone up significantly in the four years MindCORE has existed. While four years ago, it would have been considered fair to pay a student worker $4500 for 10-weeks of work, the NSF now requires students to be paid $15 per hour (or $6000 for ten weeks). Best practices today for enrolling underrepresented students also stipulate that housing ($6500+ with meals on Penn's campus for 10 weeks over summer) should be provided for those who need it. Low-income students may not be able to choose summer research opportunities when that time is one where they typically would go home and live for free and earn money from an off-campus summer job. Where $5000 per/student budget in 2018 may have been considered sufficient, $15,000 per/student would be a more accurate budget number today.

Additionally, given that Pennsylvania has the lowest hourly minimum wage ($7.25), but this amount is considered well-below cost of living wage in Philadelphia ($14.47 per hour for single adult with no children), faculty and departments hiring research students should be encouraged to pay students more than minimum wage.

With two research initiatives (SBSI & ILST) coming off funding, MindCORE looks to continue the initiative programming that have proven most useful (RA Training, Sona Paid-human subject pool, Language and Communication Science Certificate) while reexamining the format of the research grant program for a new call for applications in 2022. Entering the fifth year of operation, MindCORE is well positioned to continue to bring together our interdisciplinary constituent base in productive and rewarding programming focused on the sciences of mind and brain, while also improving preparedness, connection, and inclusion within our fields; and remains most excited to join colleagues and students again back on the beautiful Penn campus this summer.

Respectfully submitted by,
Heather Calvert, Executive Director

<u>Appendix</u>

MindCORE Directors 2020-2021
Joseph Kable, Baird Term Professor of Psychology, Director
Heather Calvert, Executive Director
Meredith Tamminga, Associate Professor of Linguistics, Associate Director of Outreach
Nicole Rust, Associate Professor of Psychology, Associate Director of Research
Florian Schwarz, Associate Professor of Linguistics, Associate Director of Education
Sharon Thompson-Schill, Christopher H. Browne Distinguished Professor of Psychology, Immediate Past Director

Faculty Advisory Board 2020-2021
Vijay Balasubramanian, Physics (FY17-20, FY21-23)
Liz Brannon, Psychology (FY20-22)
John Detre, PSOM (FY17-20, FY21-23)
Russell Epstein, Psychology (FY20-22)
Emily Falk, Annenberg (FY17-20, FY21-23)
Martha Farah, Psychology (FY17-20, FY21-23)
Maria Geffen, PSOM (FY20-22)
Joshua Gold, PSOM (FY17-19) (FY20-22)
Jay Gottfried, Psychology and PSOM (FY20-22)
Gary Hatfield, Philosophy (FY21-24)
Konrad Kording, SEAS and PSOM (FY17-19) (FY20-22)
Mark Liberman, Linguistics (FY21-24)
Barbara Mellers, Psychology and Wharton (FY17-19) (FY20-22)
Anna Pappafragou, Linguistics (FY21-24)
Michael Platt, Psychology, PSOM and Wharton (FY17-19) (FY20-22)
Marc Schmidt, Biology (FY17-19) (FY20-22)
Dan Swingley, Psychology (FY20-22)
Lyle Ungar, SEAS (FY17-20, FY21-23)
Michael Weisberg, Philosophy (FY21-24)

Ex-officio
David Brainard, SAS Associate Dean for the Natural Sciences

Ex-officio (Directors of MindCORE-funded research initiatives)
Coren Apicella, Psychology, SBSI
Geoff Goodwin, Psychology, SBSI
John Trueswell, Psychology, ILST
Charles Yang, Linguistics, ILST
Gareth Roberts, Linguistics, SCEW
Erol Akcay, Biology, SCEW

2020-2021 Pinkel Committee
Joe Kable, Co-Chair
Dani Bassett, Co-Chair
Jay Gottfried
Konrad Kording
Aaron Roth
Anna Papafragou

2020-2021 Fellowship Selection Committee
Anna Pappafragou (Linguistics, Chair)
Gary Hatfield (Philosophy)
Allyson Mackey (Psychology)
Alan Stocker (Psychology)
Jay Gottfried (PSOM & Psychology)

2020-2021 Seminar Committee
John McCoy (Wharton, Chair)
Anna Jenkins (Psychology, Immediate Past Chair)
Lisa Miracchi (Philosophy)
Josh Plotkin (Biology, Ad hoc member)
Anna Pappafragou (Linguistics, Ad hoc member)
Nicole Rust (Psychology, EC, Ad hoc Member)

2020-2021 Summer Students

<u>Gleitman Fellows</u>
- Greer Bizzell-Hatcher (Allyson Mackey) - Individual Differences in Brain Plasticity and Development
- Jenna DiStefano (John Trueswell) - The Perceptual-Conceptual Connection of Symmetry in Sign Language
- Ebony Goldman (Anna Papafragou) - Does Speaker Gender Affect the Interpretation of Polite Speech?
- Abby Laver (John Trueswell) - Understanding of symmetrical terms in transitive and intransitive sentences
- Jordan Lei (Joshua Gold) - Modeling Learning in Auditory Discrimination Tasks Using Reinforcement Learning
- Dhanya Mahesh (Kathryn Davis) - Gray Matter vs White Matter SEEG Recordings: A Signals and Networks Perspective in Epilepsy
- Alekso Miller (J. Nicholas Betley) - How different neural populations in the PBN region of the brain link to behavioral responses to pain stimuli in mice
- Shreya Parchure (Roy Hamilton) - Which Semantic Cognition Network Models Predict Language Generation?
- Bhavana Penmetsa (Lyle Ungar) - Perceptions of Gender and Class Bias in Occupations and Qualities in the US and China
- Christina Recto (Allyson Mackey) - Neural Correlates of Epistemic Curiosity in Young Children
- Wesley Streicher (Jonathan Baron) - Using the Two-Response Method to Compare Intuitive and Reflective Stereotypes
- Feiyi Wang (Sudeep Bhatia) - How Reality Could be Otherwise: Counterfactual Thinking and Preference
- Sophie Weich (Ayelet Ruscio) - Behavioral Reactions to Socially Stressful Situations: Exploring Anxious Behavior in Relation to Threat Sensitivity During a Social-Evaluative Task

<u>Greenberg Fellows:</u>
- Joseph Rudoler (Michael Kahana) - Distinguishing narrowband oscillations from the spectral background
- Kiawehokua Tarnas (Michael Kahana) - Recreating Yntema and Trask's 1963 Discrimination of Recency Experiment with JsPsych

Seminar Series 2020-2021

Oct 23, 2020: **Alexandra Rosati,** University of Michigan
https://lsa.umich.edu/psych/people/faculty/rosati.html
A sense of time in human evolution

Oct 30, 2020: **Alison Gopnik,** UC Berkeley
http://alisongopnik.com/
Childhood as a solution to explore-exploit tensions

Nov 6, 2020: **Steven Roberts,** Stanford University
https://scl.stanford.edu/
Racism: A Developmental Story

Nov 13, 2020: **Lucia Melloni,** NYU
https://med.nyu.edu/faculty/lucia-a-melloni-buljevic
The 3 Cs: Collaborating to Crack Consciousness

Nov 20, 2020: **Timothy Bayne,** Monash University
https://research.monash.edu/en/persons/timothy-bayne
How to Construct a Consciousness Meter

Dec 4, 2020: **Michael Tomasello,** Duke University
https://sites.duke.edu/tomasellolabduke/
Becoming Human: A Theory of Ontogeny

Dec 11, 2020: **Nick Chater,** Warwick University
https://www.wbs.ac.uk/about/person/nick-chater/
The social contract in miniature: Virtual Bargaining and the theory of joint action, meaning and the foundations of culture

Feb 19, 2021: New Faculty Talk - **Andy Tan,** University of Pennsylvania
https://www.asc.upenn.edu/people/faculty/andy-tan-phd
Advancing Communication Science to Address Tobacco-Related Health Disparities

Feb 26, 2021: New Faculty Talk - **Nicole Holliday,** University of Pennsylvania
https://nicolerholliday.wordpress.com/
Kamala Harris and the Construction of Complex Ethnolinguistic Political Identity

Mar 5, 2021: New MindCORE Fellow Talk - **Jessie Sun,** University of Pennsylvania
https://about.me/jessiesun
Personality Evaluated: What Do Other People Really Think of You?

Mar 12, 2021: **Jon Freeman,** NYU

http://www.jonbfreeman.com/
Towards a domain-general dynamic framework for social perception

Mar 19, 2021: **Tirin Moore,** Stanford University
https://www.moorelabstanford.com/
Robust Encoding of Abstract Rules by Distinct Neuronal Populations in Primate Visual Cortex

Mar 26, 2021: **Naomi Leonard,** Princeton University
http://www.princeton.edu/~naomi/
Stability-Flexibility Dilemma in Cognitive Control: A Dynamical System Perspective

Apr 2, 2021: **Dedre Gentner,** Northwestern University
https://groups.psych.northwestern.edu/gentner/index.htm
Structure-mapping in Human Learning

Apr 9, 2021: **Perry Zurn,** American University
https://www.perryzurn.com/
Curiosity, Power, and the Shape of Inquiry

Apr 16, 2021: Pinkel Lecture - **Mahzarin Banaji,** Harvard University
https://psychology.fas.harvard.edu/people/mahzarin-r-banaji
Blindspot: Hidden Biases of Good People

Apr 23, 2021: **Daniela Schiller,** Mount Sinai
http://labs.neuroscience.mssm.edu/project/schiller-lab/
Exploring the neural landscape of imagination and abstract spaces

MindCORE Fellows 2020-2021 Publications and Work

<u>Julia Leonard</u> (2018-2021) is a developmental psychologist working to understand the various factors that impact children's decisions to persist in the face of challenges, with applications to real-world learning.

<u>Papers</u>

Leonard, J.A., Duckworth, A.L., Schulz, L.E., & Mackey, A.P. (In press) Leveraging cognitive science to foster children's persistence. Trends in Cognitive Science

Romeo, R.R.***, Leonard, J.A.*,** Robinson, S.T., Mackey, A.P., West, M.R., & Gabrieli, J.D.E. (In press). Replication and extension of a family-based training program to improve cognitive abilities in young children. Journal of Research on Educational Effectiveness.

Romeo, R.R., **Leonard, J.A**., Grotziner, H.M., Robinson, S.T., Takada, M.E., Mackey, A.P., Scherer, E., Rower, M.L., West, M.R. Gabrieli, J.D.E. (2021). Neuroplasticity associated with conversational turn-taking following a family-based intervention. Developmental Cognitive Neuroscience, 49(100967).

Park, A.T., Tooley, U.A., **Leonard, J.A.**, Boroshok, A.L., McDermott, C.L., Tisdall, D., & Mackey, A.P. (2021). Early childhood stress is associated with blunted development of ventral tegmental area functional connectivity. Developmental Cognitive Neuroscience, 47(100909). https://doi.org/10.1016/j.dcn.2020.100909

Leonard, J.A., Martinez, D.N., Dashineau, S., Park, A.T. & Mackey, A.P. (2021). Children persist less when adults take over. Child Development, 91(4). https://doi.org/10.1111/cdev.13305

<u>Conference presentations</u>

Leonard, J.A., Liu, H., Cordey, S., & Mackey, A.P. (2021) Children stick with a challenge when their performance improves over time. Society for Research in Cognitive Development, Virtual Conference.

Leonard, J.A., Bennet-Pierre, G., Garcia, T. & Gweon, H. (2021). Young children infer relative competence based on efficiency of process and quality of outcome Society for Research in Cognitive Development, Virtual Conference.

<u>Posters</u>

Park, A.T., **Leonard, J.A.,** Tooley, U.A., Richardson, H., Ke, A., Tisdall, D., Edgar, C., & Mackey, A.P. (2020). Neural activation to naturalistic emotional events in young children. FLUX Congress, Santa Rosa, CA (Virtual conference).

<u>Invited talks</u>

Computational Cognitive Development Laboratory, Harvard University	2021
Psychology Developmental Colloquium, Temple University	2020

Colin Twomey (2018-2021) in biology explores information theory to understand the social dynamics that cause natural languages to form efficient descriptions of sensory information (https://www.sas.upenn.edu/~crtwomey/).

Papers

Devereux, H.L., **Twomey, C.R.**, Turner, M.S., and Thutupalli, S. (2021) Whirligig beetles as corralled active Brownian particles. Journal of the Royal Society Interface 18:20210114. https://doi.org/10.1098/rsif.2021.0114

Williams*, J.M., Foster*, W., **Twomey*, C.R.**, Burdge, J., Ahmed, O.M., Pereira, T.D., Wojick, J.A., Corder, G., Plotkin, J.B., and Abdus-Saboor, I. (2020) A machine-vision approach for automated pain measurement at millisecond timescales. eLife 2020;9:e57258. https://doi.org/10.7554/eLife.57258

*co-first authors

Preprints & Papers in submission

Twomey, C.R., Roberts, G., Brainard, D., and Plotkin, J.B. (2020) What we talk about when we talk about color. bioRxiv, https://doi.org/10.1101/2020.09.29.319517.
Submitted to PNAS.

Poel, W., Daniels, B.C., Sosna, M.M.G., **Twomey, C.R.**, Leblanc, S.L., Couzin, I.D., and Romanczuk, P. (2021) Subcritical escape waves in schooling fish.
In review at PNAS.

Davidson, J.D., Sosna, M.M.G., **Twomey, C.R.**, Sridhar, V.H., Leblanc, S.P., and Couzin, I.D. (2021) Collective detection based on visual information in animal groups. bioRxiv, https://doi.org/10.1101/2021.02.18.431380.
In revision at Royal Society Interface.

Jolle, J.W., Sosna, M.M.G., Mazué, G.P.F., **Twomey, C.R.**, Bak-Coleman, J., Rubenstein, D.I., and Couzin, I.D. (2021) Predator attack strategy and prey behavior drive individual predation risk in schooling prey. http://dx.doi.org/10.2139/ssrn.3773783.

Conference Presentations

Twomey, C.R. (2021) What we talk about when we talk about color. Talk presented at the Cultural Evolution Society Conference 2021; June 9-11; Sapporo, Japan (moved to virtual online meeting).

Andrea Beltrama (2019-present) is a linguist who combines the study of the formal properties of the meaning of words and morphemes with the study of what humans do when using these expressions in everyday language (https://andreabeltrama.com/).

Papers

Beltrama, A. Speaker identity and imprecision resolution. How personae affect pragmatic processing. Pragmatics Group at the Ohio State University. Linguistics Department. September 29

Refereed presentations/posters

Gomez-Lavin, J., H. Read, **A. Beltrama,** L. Miracchi. Psychological impacts of gendered AIs and their social impact. Poster to be presented at the Society for Philosophy and Psychology 47th Annual Meeting.

Gomez-Lavin, J., H. Read, **A. Beltrama,** L. Miracchi. Psychological impacts of gendered Is and their social impact. Talk at The European Experimental Philosophy Conference. Prague, Czech Republic. June 17.

Beltrama, A. and Florian Schwarz. Imprecision and speaker identity: How imprecision affects pragmatic reasoning, Talk at Semantics and Linguistic Theory 31 (SALT).

Providence, RI. May 8.

Beltrama, A. and Anna Papafragou. The social cost of maxims violation: Pragmatic behavior informs speaker evaluation. Short talk presented at CUNY 2021. March 6.

Beltrama, A. and Florian Schwarz. Imprecision and speaker identity: How social cues affect meaning resolution. Talk presented at the LSA Annual Meeting. Jan 6-9.

Beltrama, A. and Anna Papafragou. We are what we say: pragmatic behavior and social perception. Talk presented at the LSA Annual Meeting. Jan 6-9

Outreach

Language- and linguistics-related articles published on Italian Magazine **Rivista Studio.**

On "al fresco", "smart working" and word borrowing across Italian and English. https://www.rivistastudio.com/lingua-pandemia/

On the rise of the word literally. https://www.rivistastudio.com/letteralmente-come-usarlo/

On the concept of umbrella. https://www.rivistastudio.com/umarell/

On the 2020 US Presidential Campaign. https://www.rivistastudio.com/elezioni-americane-2020/

Interview for **Penn Today** on the pandemic lexicon. https://penntoday.upenn.edu/news/covid-linguistics

Rista Plate (2020-present) is a developmental psychologist who studies how children make sense of complex social environments (https://www.ristaplate.com/).

Papers

Plate, R.C., Woodard, K. & Pollak, S.D. (In Press). Statistical learning in an emotional world. Oxford Handbook of Emotion.

Woodard, K., **Plate, R.C.**, Pollak, S.D. (In Press). Children track probabilistic distributions of facial cues across individuals. Journal of Experimental Psychology: General.

Woodard, K., **Plate, R.C.**, Morningstar, M., Wood, A., Pollak, S.D. (In Press). Categorization of vocal emotion cues depends on distributions of input. Affective Science.

Leitzke, B.T., **Plate, R.C.**, & Pollak, S.D. (2020). Training reduces error in rating the intensity of emotions. Emotion. Online First.

Plate, R.C., Shutts, K., Cochrane, A., Green, C.S., & Pollak, S.D. (2020). Choice strategies in a changing social learning environment. In Denison, S., Mack, M., Xu, Y., Armstrong, B.C. (Eds.), Proceedings of the 42nd Annual Conference of the Cognitive Science Society.

Chaired Conference Symposia

Active learning across domains and development: How goals and experience shape children's pursuit of information.

> Symposium presented at the meeting of the Society for Research in Child Development, Virtual, 2021. With: Drs. Kate Nussbaum, Martin Zettersten. Discussant: Azzura Ruggeri

Invited Talks

Statistical learning in a social world (2020). Social Cognition & Learning Laboratory. University of California, San Diego (Virtual).

Talks and Posters

* indicates student mentee

Powell, T.*, **Plate, R.C.**, Wagner, N.J., & Waller, R. (2021). Emotion recognition deficits associated with callous-unemotional traits in children across static and dynamic stimuli. Poster presented at the meeting of the Society for the Scientific Study of Psychopathy, Virtual.

Steele, C.*, **Plate, R.C.**, Tu, V., Flanagan-Cato, L., & Jenkins, A.C. (2021). Remote intergroup contact between undergraduate and high school students is associated with reduced

outgroup bias. Poster presented at the meeting of the Association for Psychological Science, Virtual.

Plate, R.C., & Waller, R. (2021). Why are you laughing? Laughter perception and psychopathy. Talk presented at the meeting of the Society for Affective Science, Virtual.

Plate, R.C., Waller, R., & Wagner, N.J. (2021). Efficiency in social and nonsocial threat detection and callous-unemotional traits. Talk presented at the meeting of the Society for Research in Child Development, Virtual.

Plate, R.C., Shutts, K. Cochrane, A., Green, C.S., & Pollak, S.D. (2021). How children weight social and nonsocial information when searching for rewards. Talk presented at the meeting of the Society for Research in Child Development, Virtual.

Powell, T.*, **Plate, R.C.**, Wagner, N.J., & Waller, R. (2021). Stimulus characteristics influence emotion recognition performance. Poster presented at the meeting of the Society for Research in Child Development, Virtual.

Plate, R.C., & Jenkins, A.C. (2021). Caring about social outcomes of the COVID-19 pandemic: How the magnitude of perceived social impact predicts social interactions and state-level movement. Poster presented at the meeting of the Society of Personality and Social Psychology, Virtual.

Steele, C.*, **Plate, R.C.,** Flanagan-Cato, L., Jenkins, A.C. (2021). Reductions in outgroup bias among undergraduates across a semester of weekly intergroup contact. Poster presented at the meeting of the Society of Personality and Social Psychology, Virtual.

Plate, R.C., Woodard, K. & Pollak, S.D. (2020). Model gender influences emotion categorization. Poster presented at the 42nd Annual Conference of the Cognitive Science Society, Virtual.

Steele, C.*, **Plate, R.C.**, Flanagan-Cato, L., Jenkins, A.C. (2020). A real world study of the contact hypothesis: Intergroup contact in academic service-learning. Poster presented at the CURF & MindCORE Online Poster Session.

Jessie Sun (2020-present) in psychology investigates the connections between well-being and morality in real-world contexts. (https://about.me/jessiesun).

Publications

Sun, J., Neufeld, B., Snelgrove, P., & Vazire, S. (in press). Personality evaluated: What do people most like and dislike about themselves and their friends? *Journal of Personality and Social Psychology.* https://psyarxiv.com/4sgna/

Sun, J., Rhemtulla, M., & Vazire, S. (2020). Eavesdropping on missing data: What are university students doing when they miss experience sampling reports? *Personality and Social Psychology Bulletin.* Advance online publication. https://dx.doi.org/10.1177/0146167220964639

Conference Presentations

Sun, J. (2021). *Calibrating life satisfaction scores to concrete behavioral frequencies.* Data blitz presented at the Society for Personality and Social Psychology Happiness and Well-Being Preconference.

Sun, J., Neufeld, B., Snelgrove, P., & Vazire, S. (2021). *Personality evaluated: What do people like and dislike about themselves and their friends?* Express talk presented at the Society for Personality and Social Psychology Annual Convention.

Invited Talks
Are moral people happier? (2021, May). Morality and Language Lab, University of Southern California.

Other people matter: Social and moral aspects of the good life. (2021, May). Department of Psychological and Behavioural Science, London School of Economics and Political Science.

Personality evaluated: What do other people really think of you? (2021, March). MindCORE Seminar, University of Pennsylvania.

Personality and the pursuit of well-being. (2021, January). Department of Psychology, University of British Columbia.

The good life in everyday life. (2020, October). Department of Social Psychology, Tilburg University.

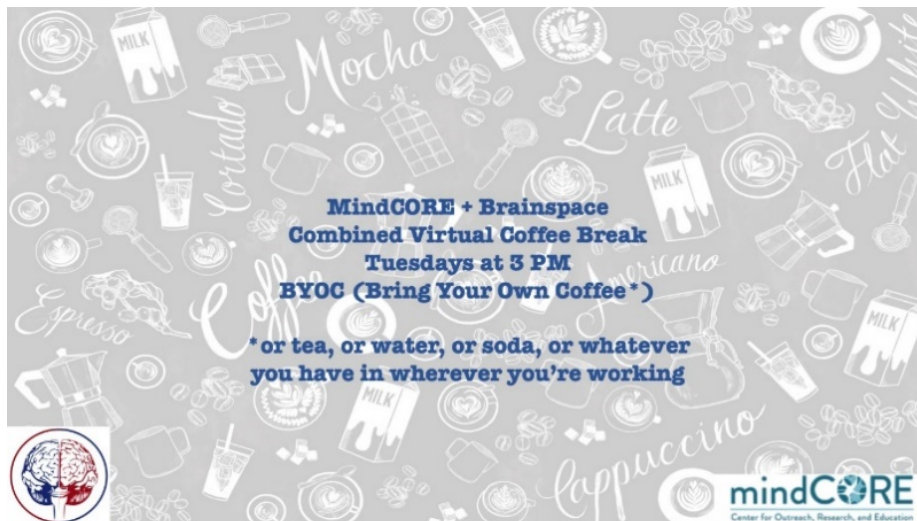**Some Sample Cosponsored Events and Affiliated Programming**

NGG / GLIA Biannual Public Lecure

> **"Under Pressure: The Neuroscience of Stress"**
> Neuroscience Winter Public Lecture: Thursday, December 3rd, 6:00pm EST
> Three 15-minute TED style talks from Penn's Michael P. Hart and Allyson Mackey, and Temple University faculty member Debra Bangasser.

> **"Neuroinflammation: The Brain's Defense Mechanism"**
> Neuroscience Spring Public Lecture: Tuesday, April 20th, 6:00pm EST
> Three 15-minute TED style talks from Penn's Dr. Chris Bennett and Dr. Jennifer Orthmann-Murphy, and Jefferson's Dr. Elena Blanco-Suárez

Franklin Institute Symposium: The Past, Present and Future of Formal Semantics
Monday, April 19, 2021

Featuring Barbara Partee, recipient of the 2021 Benjamin Franklin Medal in Computer and Cognitive Science

23rd Annual Pinkel Endowed Lecture
Friday, April 16, 2021, 12:00pm EDT

Mahzarin R. Banaji
Richard Clark Cabot Director of Social Ethics
Department of Psychology
Harvard University
Blindspot: Hidden Biases of Good People

Mahzarin Banaji and her colleague coined the term "implicit bias" in the mid-1990s to refer to behavior that occurs without conscious awareness. Today, Professor Banaji is Cabot Professor of Social Ethics in the Department of Psychology at Harvard University, a member of the American Academy of Arts and Sciences, the National Academy of Sciences and has received numerous awards for her scientific contributions.

Photo Credit: Robert Taylor www.taylor-photo.co.uk

PSPS

New and Noteworthy in Psychedelic Science

A seminar series by the Penn Society for Psychedelic Science

Rafael Lancelotta is a Social Work PhD student at The Ohio State University focusing on levels of social/therapeutic support and their relationship to improvements in mental health symptoms in the context of psychedelic-assisted therapy. Before starting their PhD program, they worked as a somatic-focused, trauma-informed therapist in private practice in Golden, Colorado supporting clients' use of cannabis and ketamine to facilitate the therapeutic process. They have authored, co-authored, helped design, carry out, and present over 20 research papers and projects on psychedelic use and psychedelic-assisted therapy. They are passionate about expanding accessibility to psychedelic-assisted therapies to all people that may benefit as well as helping to raise awareness as to the responsible clinical applications of psychedelics/entheogens. They hope to continue working to help develop evidence-based practices for psychedelic-assisted therapy sessions and integration to empower individuals to make lasting positive change in their lives and in their communities.

Rafael Lancelotta, PhD candidate
Ohio State University
Department of Social Work
Tues May 11th 4pm

Epidemiology of Naturalistic Mescaline Use in the General Population and Impacts on Mental Health

Research Initiative Reports
Social and Behavioral Science Initiative (SBSI) Report
Integrated Language Science and Technology (ILST) Report
Social and Cultural Evolution Working Group (SCEW) Report