



MIND & LIFE
ISCR 2018

Concurrent Session D Presentations

Saturday 11/10

3:45–4:45 PM

D01 - Panel

Kave Ballroom

Presenters:

Moderator: Louis Komjathy, *University of San Diego*

Panelist: Oludamini Ogunnaike, *College of William & Mary*

Panelist: Rhonda Magee, *University of San Francisco*

Panelist: Alberto Pulido, *University of San Diego*

Title: *Dewhitening Contemplative Studies: Diversification and 'Other' Identities*

Abstract: In order to realize its stated goal of developing a more comprehensive and sophisticated understanding of contemplative practice and contemplative experience, the emerging interdisciplinary field of Contemplative Studies, which includes contemplative pedagogy and contemplative science, must begin addressing some of its problematic assumptions, deficiencies, and tendencies. It must aspire to be more diverse and inclusive. In the context of a discussion panel, participants will explore the importance of diversification and "other" identities. The latter consist of often excluded and marginalized ethno-cultural identities, engaged contemplative pedagogies concerned with issues of social justice, and under-represented contemplative approaches and traditions. Some guiding discussion questions include the following: 1. How do we develop a more diverse and inclusive field? 2. What types of contemplative pedagogical approaches and exercises might facilitate this? 3. What are the potential contributions of local knowledges and indigenous perspectives?

D02 - Panel

Coyote + Buzzard + Eagle

Presenters:

Moderator: Tara Healey, *Harvard Pilgrim Health Care*

Panelist: Gina LaRoche, *Seven Stones Leadership*

Panelist: Andy Lee, *Aetna*

Panelist: Christopher Lyddy, *University of Providence*

Title: *Contemplative Management: The Emerging Art and Science of Mindfulness at Work*

Abstract: Organizational interest in mindfulness is growing rapidly, as scientific evidence suggests that the quality and practice of mindfulness offers substantial workplace benefits. These findings have led major organizations like Aetna, Google, and Harvard University to invest in employee mindfulness training. Nonetheless, understanding of the workplace impacts and integration of mindfulness remains very limited. The session will help to clarify the present and future of mindfulness at work by filling key knowledge gaps. To provide critical grounding, the panel will first address: what do we know scientifically about mindfulness at work? Discussion will consider emerging theory that mindfulness is a cognitive mode of 'Being' that contrasts with typical 'Doing' mode functioning at work, and evidence that mindfulness has interpersonal, attitudinal, and job performance impacts. Then the panel will draw on decades of workplace mindfulness training expertise to explore: how can organizations most effectively cultivate mindfulness? Topics will include how leaders can preserve the integrity of mindfulness programs in corporate environments, integrate mindfulness into leadership development and personal coaching, and scale up from classroom mindfulness training to mindful cultures. The conversation will continue with an extended discussion of the future of mindfulness at work, considering what does the field need to learn about mindfulness at work? Presenters will address how mindfulness may intersect workplace diversity and inclusion; whether workplace context and technology influence mindfulness at work; and how workplace mindfulness research and practice might become mutually synergistic. The event will close with audience questions and discussion.

D03 - Panel

Bird + Roadrunner

Presenters:

Moderator: Susan Bauer-Wu, *Mind and Life Institute*

Panelist: Zindel Segal, *University of Toronto*

Panelist: Eric Garland, *University of Utah, College of Social Work*

Panelist: Linda Carlson, *University of Calgary*

Title: *To RCT or Not to RCT? Pitfalls and Promise of Novel Biobehavioral Trial Designs in Contemplative Clinical Science*

Abstract: Randomized controlled trials (RCTs) are considered the "gold standard" methodology to determine intervention efficacy, and the only design that allows researchers to draw conclusions of causality. While this design reduces bias and enhances internal validity, it comes at a cost. Increasingly, clinical researchers are identifying drawbacks of traditional parallel RCTs when it comes to real-world applications and effectiveness, as well as dissemination, scalability, implementation, and optimization. In the real world, people freely choose programs they are interested in and have comorbidities that can affect treatment response. Additionally, traditional RCTs test whole intervention packages at a molar level, yet greater granularity is needed to elucidate biobehavioral mechanisms of contemplative interventions for the purpose of treatment development and optimization. Alternatives include a number of pragmatic designs such as preference-based and adaptive trials that stray from traditional methodology. Methods to support treatment refinement and augmentation include dismantling trials, multiphasic optimization strategies, and the use of psychophysiological measures and mediation models to identify active therapeutic ingredients. This panel will discuss their experience as contemplative clinical scientists working with traditional RCTs and the potential promise and pitfalls of alternative designs and measurement strategies. Discussion Questions: 1. When would it be advisable to forego a parallel RCT and choose an alternative study design in contemplative science? 2. How can researchers choose the best alternative if they decide to use a pragmatic study methodology? 3. How can research designs and measurement strategies be leveraged for the purpose of optimizing and strengthening the efficacy of contemplative clinical interventions?

D04 - Papers

Komatke A

Session Title: *Advances in Behavioral Measurement of Mindfulness*

Session Abstract: Much of what we know about mindfulness is grounded in research using retrospective self-report measures susceptible to demand characteristics and retrospective response biases. Accordingly, development and validation of rigorous behavioral and performance measurement methods of mindfulness not susceptible to these limitations is important to advance the field of mindfulness research. This paper session will focus on advances in behavioral measurement methods of key cognitive processes subserving mindfulness. Yuval Hadash will present a novel behavioral paradigm measuring attentional processes subserving the dynamics of attention and

awareness in open-monitoring mindfulness meditation. Matthew J. Hirshberg will present findings on the breath counting task, a measure of focused attention on the breath, as well as other behavioral tasks putatively related to mindfulness. Finally, Thomas Anderson will present findings from a study utilizing the metronome response task and a deep-learning neural network to investigate the time-course of mind-wandering and meta-awareness.

Moderator: Amit Bernstein

Paper D04a

3:50–4:05 PM

Title: *A Novel Behavioral Measure of Attention and Awareness in Mindfulness Meditation: The Mindful Awareness Task (MAT)*

Presenter: Yuval Hadash, *University of Haifa*

Authors: Y Hadash, L Ruimi, O Harel, A Bernstein

Abstract: An important next step in the field of mindfulness measurement is the development of methods quantifying attentional processes subserving the dynamics of attention and awareness in mindfulness meditation. These processes include: (1) sustained meta-awareness, (2) disengagement from mindlessness, (3) intentional shifting of awareness, and (4) an open field of awareness. Accordingly, we developed a novel paradigm—the Mindful Awareness Task (MAT)—utilizing a phenomenological first-person perspective combined with computational analysis of behavioral markers to measure mindfulness processes. In the MAT participants provide real-time self-caught reports (behavioral markers) of their attention and awareness during a 20-minute open monitoring mindfulness meditation, by verbally stating a label describing each experience they notice and pressing a button when they notice their breath. We measure mindfulness processes using variables derived from (1) manualized qualitative coding of the content of participant's verbal reports, and (2) computerized algorithms analyzing the timing and order of participant's self-caught reports. We will report findings from a study (N=143) testing the MAT construct validity as well as its incremental validity beyond existing retrospective self-report scales of mindfulness, experience sampling measures of mindfulness, and cognitive experimental tasks (i.e., SART, Task-Switching). Furthermore, we will present findings on the utility of the MAT in assessing the temporal dynamics of attention and awareness and the temporal relations between mindfulness processes during open monitoring mindfulness meditation. We will discuss the implications of these findings for the field of mindfulness measurement.

Paper D04b

4:10–4:25 PM

Title: *Behavioral Measurement of Mindfulness*

Presenter: Matthew J. Hirshberg, *Center for Healthy Minds, University of Wisconsin-Madison*

Authors: M Hirshberg, E Patsenko, R Davidson, C Wilson-Mendelhall

Abstract: Interest in mindfulness has exploded over the last few decades, fueling a major industry and a burgeoning area of research. Mindfulness, however, has proven enigmatic, in definition and in assessment. Several extensively studied self-report questionnaires exist, but along with typical concerns attending subjective evaluations, recent data suggests these scales may lack construct and divergent validity. In addition, the relationship between high "trait" scores and capacity cultivated through meditation training is unclear. Interest in objective, behavioral assessments has accelerated as a result. In 2014, members of our group published the first putative behavioral measure of mindfulness: the breath count task, assessing a participant's ability to accurately count breath cycles. We report on subsequent cross-sectional and experimental study of this and other behavioral tasks putatively related to mindfulness, raising important questions about the behavioral measurement of mindfulness and its relationship to existing self-report instruments.

Paper D04c

4:30–4:45 PM

Title: *Measuring Meta-Awareness and Focus' Dissolution into Mind-Wandering*

Presenter: Thomas Anderson, *University of Toronto*

Authors: T Anderson, N Farb

Abstract: Insight into the workings of consciousness and its relation to the world of experience is a central target of contemplative practice. Meta-awareness (MA) is the process of noticing and appraising the current contents of consciousness. MA seems critical to performance monitoring, i.e. detecting when cognition or behaviour produces unexpected outcomes and may benefit from situational adjustment. Despite the importance of MA, studies have not been dedicated to its dynamic measurement. Some studies have considered MA retrospectively, measuring momentary failure detection, but MA may include more dynamic, continuous processes. Understanding real-time variability in MA and the process of focus' dissolution into mind-wandering would bring insight into the variability of attention during both formal meditation and in daily life. Here we report on a multi-site, pre-registered replication (N = 300, OSF <https://osf.io/5mbda/>) of the recently developed Metronome Response Task (MRT). The MRT is a continuous performance task wherein response variability serves as an implicit, dynamic indicator of mind-wandering. We will describe the validation of this task as an extension beyond current limitations in MA measurement. Furthermore, we will describe the development of a deep-learning neural network aimed at distinguishing between MA, mind-wandering with MA, and accidental mind-wandering, first from behavioral data and eventually from neural and physiological sources. Modelling meta-awareness is inherently useful for understanding consciousness

and these studies will inform the time-courses of patterns and mechanisms in the sustained-attention cycle in meditation and beyond.

D05 - Papers

Komatke B

Session Title: *From Nasty to Neighborly: The Intra- and Interpersonal Benefits of Meeting Disgust With Mindfulness*

Session Abstract: As a quality of receptive attention, mindfulness is known to promote manifold emotion-regulatory and interpersonal benefits. The present sequence of talks bridge these areas and explore the psychosocial consequences of disgust, and how mindfulness training may promote disgust regulation and translate into downstream prosocial behavior. Presentation 1 will explore the role that disgust plays in the disambiguation of information, the promotion of intergroup bias, and its capacity to blunt mindful awareness. Presentation 2 expands upon the theoretical framework provided in Presentation 1 and provides evidence that a process-focused mindfulness training program designed to promote disgust regulation, relative to a structurally equivalent active control program, dampens Late Positive Potential responses to disgusting stimuli. Presentation 3 describes three studies that indicate mindfulness training fosters prosocial helping behavior in interracial contexts. Together these findings highlight the benefits of mindfulness training for regulating disgust and its accompanying prosocial benefits.

Paper D05a

3:50–4:05 PM

Title: *Tidiness of Mind: Disgust and the Disambiguation of Consciousness*

Presenter: John Terrizzi, Jr., *Texas Women's University*

Authors: J Terrizzi, M Shea

Abstract: Mindfulness enables us to see the world as it is. This is in stark contrast to everyday social experiences which involve the unintentional and automatic categorization of information. Humans are goal-directed, purposive organisms and our goals are biologically bound. From an evolutionary perspective, the mind is a behavioral multi-tool composed of psychological mechanisms, which are evolved solutions to specific adaptive challenges (e.g., infectious disease). Behavioral decisions, however, are not always simple. We live in a messy world that is full of ambiguity. As such, decisions often involve conflict. For example, a situation may contain properties that encourage both an approach (e.g., hunger encourages food seeking) and avoidance orientation (e.g., rotten food

encourages abstention). Consequently, organisms have a need for coherence. That is, they require a cognitive structure that enables them to quickly and decisively respond to a stimulus. The current project argues that disgust plays an important role in this disambiguation and at extreme levels may interfere with the mindful experience. Disgust is believed to be a solution to the adaptive challenge of infectious disease. Its primary function is to encourage spatiotemporal avoidance of potential contaminants. As a consequence, it has broad embodied cognitive consequences for the categorization of information. First, the current paper will provide a literature review illustrating disgust's role in cognitive disambiguation. Second, empirical data will provide evidence that disgust is associated with intolerance for ambiguity and that for those who are intolerant of ambiguity (i.e., +1 SD), disgust inhibits the mindful experience.

Paper D05b

4:10–4:25 PM

Title: *Mindfulness Training Dampens Late Positive Potential Responses to Disgust*

Presenter: Robert Goodman, *Northern Arizona University*

Authors: RJ Goodman, PE Plonski, J Cutler

Abstract: Empirical literature on mindful emotion regulation is plentiful, yet little research has explored the influence of mindfulness on the regulation of discrete emotions, such as disgust. This area of research is important because discrete emotions have unique consequences for downstream thought and behavior. For example, people who are sensitive to disgust are avoidant of outgroup members and more likely to demonstrate prejudice and discrimination toward outgroups, including immigrant, Muslim, obese, and LGBTQ people. One way mindfulness may promote prosociality is through improvements in the ability to regulate disgust. There are sound reasons to suggest a particular practice derived from seminal Early Buddhist canonical texts on mindfulness training—the Satipatthana Sutta—may actively target the regulation of disgust as an initial step during mindfulness training. To this end, we have developed an intensive 5-day mindfulness training program and a structurally equivalent active control condition to explore the effects of a Satipatthana contemplation on the "foulness of the body" on disgust regulation, as measured by late positive potential (LPP) responses to disgust-eliciting visual stimuli. We present pilot data from a randomized controlled trial (N=36) that examines training-induced changes to disgust-elicited LPP responses and whether these differences translate into reduced self-reported prejudice against outgroup members. By conjoining Early Buddhist and Western psychological conceptualizations of mindfulness with techniques from social and affective neuroscience, the present work suggests one proximate mechanism through which mindfulness promotes prosociality is the ability to adaptively regulate the emotion of disgust.

Paper D05c

4:30–4:45 PM

Title: *Brief Mindfulness Training Increases Helping Behavior Toward Racial Outgroup Members*

Presenter: Daniel Berry, *California State University, San Marcos*

Authors: DR Berry, KW Brown

Abstract: Decades of research have shown that people are generally less helpful toward racial outgroup members than ingroup members in need. Drawing upon contemplative theory and research, we ask whether mindfulness, examined here as a quality of receptive attention, can reduce the influence of psychological and situational factors that commonly inhibit interracial prosociality, thereby promoting helping behavior toward racial outgroup members. We discuss three experiments (N = 335) showing that brief mindfulness training increases interracial helping behavior. Prior to witnessing a Black individual being excluded in an online ball-tossing game (Cyberball), White participants were randomized to receive brief focused attention-based mindfulness meditation instruction (MM), attentional control instruction, or an inactive, no-instruction control (Studies 1 and 2). MM participants reported higher empathic concern for the excluded player, wrote more comforting emails to them, and shared the ball more with the exclusion victim during an 'all play' game that followed. Study 3, a randomized controlled intervention trial, extended these findings to simulated real-world situations. White participants were randomized to a 3-day focused attention-based mindfulness training (MM) or sham-mindfulness meditation training (SM) and were placed in situations in which they witnessed a Black person in apparent need of help. MM increased interracial helping, relative to SM, from pre- to post-intervention. These studies are the first, to our knowledge, to show that mindfulness can foster prosocial action in interracial contexts. We discuss how mindfulness training may compliment current efforts to improve interracial relations.

D06 - Papers

Komatke C

Session Title: *Development and Training of Classroom Teachers to Deliver Mindfulness-Based Interventions Effectively*

Session Abstract: More schools are adopting MBIs, yet little is known about how K-12 teachers with minimal mindfulness training understand and implement mindfulness practices. Crane and colleagues (2010, 2012) posit that teachers must first have a developed mindfulness practice of their own before they undergo training to teach an MBI to others. As such, teaching MBIs requires more than just adherence to program components, as with other classroom curricula; it requires embodiment of the attitudinal foundations of mindfulness (Kabat-Zinn, 1990; McCown, Reibel, Micozzi, 2011). Teacher training and certification for those working with adults in medical and clinical settings exist (e.g., MBSR,

MBCT), yet little empirical data examines how teachers in K-12 classrooms develop in this new role. This session explores how K-12 teachers are trained to deliver MBIs in classroom settings and investigates particular aspects and challenges related to their development, specifically, their embodiment of mindfulness.

Moderator: Mark Greenberg

Paper D06a

3:50–4:05 PM

Title: *Evaluating the Quality of Mindfulness Teaching in School Settings: The Teaching Mindfulness in Education Observation Scale (TMEOS)*

Presenter: Patricia Broderick, *Pennsylvania State University*

Authors: P Broderick, J Frank, E Berrena, J Mitra, Y Oh, D Schussler, K Kohler, R Roeser, M Greenberg

Abstract: As interest increases in mindfulness-based interventions (MBIs) in education, there is a need to develop reliable measures of the quality of program implementation. This presentation describes the development and psychometric properties of the Teaching Mindfulness in Education Observation Scale (TMEOS), a 28-item observational instrument that integrates qualitative and quantitative aspects of mindfulness instruction. The TMEOS was developed using live and videotaped observations of three teachers who presented Learning to BREATHE (L2B), an MBI for adolescents in school settings, over a two-year period. Key aspects involved in teaching mindfulness were grouped into four major domains: (1) Planning, Organization, and Curriculum Coverage; (2) Teaching Mindfulness; (3) Guiding Mindfulness Practices; and (4) Management of the Learning Environment. Domains 1 and 4 primarily focus on procedural adherence and fidelity, whereas domains 3 and 4 focus on teacher embodiment of mindfulness during instructional delivery. Overall, domains exhibited excellent internal consistency. Absolute coder agreement was in the acceptable range with behavioral aspects of program adherence easier to assess reliably than aspects of teacher embodiment quality. Given the importance of qualitative factors like teacher embodiment for effective mindfulness teaching, raters should have personal mindfulness experience as well as programmatic knowledge before observing and rating others. Although this scale was developed for L2B, it can be adapted for use with other MBIs.

Paper D06b

4:10–4:25 PM

Title: *From "Doing" to "Being": A Longitudinal Investigation of Classroom Teachers' Implementation of a Mindfulness Based Intervention*

Presenter: Deborah Schussler, *Pennsylvania State University*

Authors: D Schussler, J Mahfouz, J Levitan, K Kohler, J Frank, P Broderick, M Greenberg

Abstract: This longitudinal, qualitative study investigates the trajectory of how public school teachers conceptualize mindfulness and implement an MBI with their students. Specifically, we examine: 1) whether and how teachers embody a "mindful mindset," 2) the challenges of implementing an MBI and how this changes over time. Participants included three 11th grade health teachers implementing Learning to BREATHE (L2B)—an MBI focusing on awareness of mind, body, and emotions—for the first time. Teachers received mindfulness training and an orientation to L2B before implementing the curriculum and ongoing coaching during implementation. Teachers were interviewed over a two-year period (before, during, immediately after, and three months after implementation). Data were analyzed using a grounded theory approach (Strauss & Corbin, 1998) with emergent and a priori codes. Teachers valued the MBI but struggled to make the shift from teaching/doing to facilitating/being. Comfort with the MBI curriculum and support through coaching (i.e., non-evaluative observer) facilitated this shift. The one teacher who had more opportunities to develop her own mindfulness practice transitioned into a mindful mindset more readily. Teachers also navigated a number of structural challenges, like sharing classrooms and mandated accountability for homework, that were sometimes in tension with the MBI. Consistent with the framework of skillsets of MBI teachers (see McCown, Reibel, & Micozzi, 2011) and domains of teaching competence (see Crane, et al., 2010), teachers implementing MBIs need mindfulness training, commitment to the program, and support from other knowledgeable mindfulness teachers.

Paper D06c

4:30–4:45 PM

Title: *What it Takes to Teach Mindfulness in Elementary School: A Case Study of Teachers' Embodiment of Mindfulness*

Presenter: Polina Mischenko, *University of Virginia*

Authors: P Mischenko, P Jennings

Abstract: This presentation shares findings from a comparative case study on the experiences of teachers delivering the mindfulness-based Compassionate Schools Project health and wellness curriculum to elementary school students. The study explored the role of teachers' "embodiment of mindfulness" and personal practice in the implementation of this curriculum. Five teachers (in their second or third year of curriculum delivery) were purposively selected to achieve maximum variation sampling based on their implementation fidelity scores and their initial interest level in delivering this curriculum. Data collection included interviews, classroom observations, and self-report surveys. Data analysis was informed by a grounded theory approach (Strauss & Corbin, 1998). Teachers with high fidelity of implementation scores tended to embody mindfulness to a greater extent than the low fidelity teachers with regard to their reported beliefs about mindfulness, their engagement in mindfulness practice outside of the school setting, and their modelling of mindfulness within the classroom. These findings were consistent regardless of whether or not the teacher was initially

interested in delivering the curriculum. Modelling of mindfulness was observed through the high fidelity teachers' mindful focus of attention, non-reaction and calm, and nonjudgment and compassion in their interactions with students. Exploring the supportive qualities and practices of school-based mindfulness facilitators can help develop effective professional learning opportunities and promote useful personal and professional practices among existing instructors.

D07 - Papers

Ant

Session Title: *Interdisciplinary Approaches to the Implementation of Compassion Training and Compassion Interventions in Hospital Chaplaincy*

Session Abstract: Hospital chaplains play a vital role in delivering emotional and spiritual care to a broad range of both religious and non-religious patients, yet contemplative practices have been remarkably absent from chaplain clinical intervention. This gap is likely symptomatic of a dearth of research evaluating chaplain standard of care, as well as historical and institutional factors that have isolated contemplative science from spiritual health. Here, scholars of religion, spiritual health, public health, anthropology, and psychiatry will describe a multidisciplinary research-based initiative to incorporate CBCT[®] (Cognitively-Based Compassion Training) into an accredited Clinical Pastoral Education (CPE) program, and to construct and evaluate novel CBCT-informed interventions for delivery by hospital chaplains. Panelists will present diverse methodologies and models that can be brought to bear on both patient suffering and on meditation practiced within a spiritual health context, while relating these topics to larger investigations of engaged compassion and contemplation.

Moderator: Charles Raison

Paper D07a

3:50–4:05 PM

Title: *Compassion-Centered Clinical Pastoral Education, a Contemplative and Interdisciplinary Practice*

Presenter: Marianne Florian, *Emory University*

Authors: M Florian, M Shelton, G Grant

Abstract: When hospital chaplain trainees begin their residency in Spiritual Health at Emory Healthcare, they are already interdisciplinary practitioners, relying on their faith traditions' basic orientations and on sophisticated tools for theological, philosophical, or ethical reflection (usually honed in graduate level study). The understandings they carry with them are the very means by which

they engage with ACPE accredited Clinical Pastoral Education (CPE), making the chaplain resident a unique point where distinctive religious, professional, and cultural streams converge. At Emory, the CPE program is radically re-centering its educational model on the ethic of compassion to establish a worldview-inclusive basis for spiritual health care-giving. This pioneering program includes curricular engagement and guidance to (A) build familiarity and research literacy in health sciences models of disease and healing, and (B) introduce the fundamental meditation practices and self-reflection strategies of CBCTÂ® (Cognitively-Based Compassion Training). These two additional conceptual frameworks furnish methods for analyzing experience and exposure to logics and healing modalities that may be less hindered by differences of worldview while also helping chaplain residents to cultivate more resilience in their work. This paper describes the programmatic restructuring underway at Emory, using ethnographic research to conceptualize chaplain trainees as interdisciplinary workers who utilize elements from the various traditions they embody, respond creatively to human vulnerability and suffering, and create a novel, worldview-inclusive spiritual healing practice.

Paper D07b

4:10–4:25 PM

Title: *Distress Among Hospitalized Patients: A Precursor Study to Developing and Testing Targeted Spiritual Care Interventions*

Presenter: Kim Palmer, *Rollins School of Public Health, Emory University*

Author: K Palmer

Abstract: Chaplain-delivered spiritual health interventions are an important element of whole-person care for hospitalized patients, and have been shown to improve quality of life and to reduce anxiety and length of stay. The need for more evidence-based practice is recognized within professional chaplaincy. As a precursor to developing targeted, compassion-informed interventions, we conducted a cross-sectional study (n = 273) of medical inpatients at two acute care hospitals in a major metropolitan area of the southeast United States to explore the most prevalent sources of distress among hospitalized patients, about which little is currently known. Patients self-reported anxiety (State Trait Anxiety Inventory), religious and spiritual meaning, and the presence or absence of 40 individual distress items. Demographic and clinical variables were collected from subsequent chart review. Distress was common among those surveyed; a mean of 10.4 distress items were endorsed (standard deviation = 7.9). We performed a factor analysis of the 40 distress items in order to identify thematic factors salient to patient distress, and identified: isolation, physical decline/death, and faith crisis. Finer grained analysis indicates that the patient distress profile differs depending on religiosity and clinical demographics, in terms of both number of distress items endorsed and distribution of thematic factors. These data will be used to develop and test compassion-based interventions to be delivered by chaplains at the bedside, and they may be useful toward incorporating diverse contemplative practices in chaplain training and spiritual care.

Paper D07c

4:30–4:45 PM

Title: *Evaluation of a Compassion-Informed Program to Improve Chaplain and Patient Outcomes***Presenter:** Jennifer Mascaro, *Emory University School of Medicine***Authors:** J Mascaro, M Ash

Abstract: How can we evaluate the impact of incorporating contemplative practices into the education and toolkit of hospital chaplains? Chaplains play a vital role in delivering emotional and spiritual care to a broad range of both religious and non-religious patients, and extensive research indicates that chaplain spiritual consults positively impact patient clinical outcomes, well-being, and satisfaction. Remarkably, contemplative practices have been largely absent from chaplain clinical interventions, and the introduction of meditation has transformative potential for supporting patients with diverse faith models. CBCT® (Cognitively-Based Compassion Training) is a secularized compassion meditation program adapted from the Tibetan Buddhist mind training (lojong) tradition, and it is hypothesized to be an ideal addition to the spiritual caregiving provided by hospital chaplains. Previous research indicates that CBCT improves empathic accuracy, enhances well-being, and attenuates the pro-inflammatory response to psychosocial stress. Here we describe the evaluation of a novel and comprehensive program to incorporate CBCT into a clinical pastoral education program and to adapt CBCT for delivery by chaplains to patients at the hospital bedside. Based on pilot data gathered from chaplain residents, we propose to examine the impact of CBCT on burnout, compassion, and empathic accuracy among chaplains in training; evaluate whether CBCT-informed spiritual consults improve patient clinical outcomes; and explore mechanisms of action in spiritual consults. The research discussed here incorporates meaningful indicators and tests theoretical models drawn from multiple disciplines that often approach the study of engaged compassion in parallel, including spiritual health, contemplative science, and social psychology.

D08 - Papers

Quail

Individual Presentations

This session contains individually submitted paper presentations. Details for each paper are listed in the subsessions below.

Paper D08a

3:50–4:05 PM

Title: *The Contemplative Mind and Lucidity during Virtual Reality: Initial Findings and Implications*

Presenter: Jordan Quaglia, *Naropa University*

Author: J Quaglia

Abstract: Virtual reality (VR) offers an unparalleled medium for creating a sense of presence somewhere other than one's current physical surroundings. Contemplative experience and training, by seeming contrast, generally entail a greater sense of presence in one's current surroundings. To begin exploring some questions at the intersection of VR and contemplative experience, this presentation highlights theory, findings, and implications from a preliminary investigation on relations between contemplative experience, regulatory functioning, and virtual lucidity in VR. Virtual lucidity (VL) is a new construct similar to lucidity during dreaming, but regarding awareness that one is having a virtual experience. In the context of a virtual threat scenario of walking, and being asked to step off, a wooden plank seemingly high above a city, VL predicted lower fear and greater likelihood of stepping off the plank. Additionally, various factors pertaining to contemplative experience and training (e.g., dispositional mindfulness, meditation experience) predicted VL and related outcomes across a community sample and lucid dream trainees at a meditation retreat center. Lucid dream retreatants, engaged in a contemplative practice called illusory form yoga, experienced more VL and less fear compared to nonretreatants, with marginally higher likelihood of stepping off the plank. Finally, VL mediated all significant relations between predictors and outcomes. Discussion focuses on how findings from this initial investigation may inform future contemplative research in the context of VR.

Paper D08b

4:10–4:25 PM

Title: *Exploring the Interface of Contemplative Practices With Soft Robotics and the Neuroscience of Bodily Self-Consciousness in Support of Naïve Meditators*

Presenter: Giulio Rognini, *Ecole Polytechnique Federale de Lausanne (EPFL)*

Authors: G Rognini, D Hangartner, S Gallo, O Blanke

Abstract: Contemplative practices have shown to be beneficial for many clinical conditions and to promote well-being. Scientific research and the Buddhist tradition highlight how these effects are based on specific neural, psychological, and phenomenological processes, in particular those related to the self. Current technological efforts focus more on the digital distribution of contemplative practice guidance (e.g. meditation apps), rather than on the support of the underlying processes that ground contemplative experiences to the self. A powerful approach to empirically investigate the self has been to target the brain mechanisms that process bodily signals (i.e. bodily self-consciousness/awareness).

Recent developments in virtual reality and robotic technologies have allowed us to investigate those mechanisms by providing subjects with ambiguous multisensory information about their own body. Similar paradigms have shown to restore embodiment and reduce neuropathic pain in different patient populations—including amputation and spinal cord injury—and to differentially affect expert meditators and healthy subjects (at both behavioral and neural level; preliminary data), suggesting a direct link between contemplative practices and bodily self-consciousness/awareness. Here, we present a new approach to support meditation practices based on the technology-mediated interaction with the bodily self. Our approach includes: 1) the personalized administration of complex tactile stimulations through a soft robotic interface; 2) the combination of this with visualization techniques, and 3) auditory feedback to create immersive experiences. We are testing how these different components affect meditative experience - assessed through behavioral and neural measures - with the aim to support coping with trauma and degenerative ailments.

Paper D08c

4:30–4:45 PM

Title: *Emotionally Intelligent and Mindful Software Engineering*

Presenter: Jami Cotler, *Siena College*

Author: J Cotler

Abstract: With technology becoming a fundamental part of everyday life we have an opportunity to foster the growth of a more mindful and compassionate world through the use of emotionally intelligent and mindful software engineering. By infusing mindfulness and emotional intelligence (EI) into software engineering curriculums, newly minted computer science students can change how technology is designed in a way that is mindful. This paper presents the findings from a two-semester software engineering capstone class where an evidence-based mindfulness based emotional and social intelligence program was integrated throughout the curricula. By developing undergraduate software engineering programs that include these teachings, the authors maintain that there is an opportunity to change the future of technology and its potential positive impact on society. There is mounting evidence that face-to-face EI workshops in K-12 environments have produced positive outcomes. Very few studies, however, have been devoted to exploring EI curricula and its potential to enhance the EI of undergraduate students in general and computer science students specifically. Furthermore, little research has examined the role of technology in teaching EI and what might be some key variables such as mindfulness that influence the success of this delivery approach (as measured in increased self-reported EQi 2.0 assessments). This mixed methods study builds on previous work demonstrating the effectiveness of teaching these vital skills to computer science students and further discusses the ultimate impact on the technology developed.

D09 - Papers

Horse

Individual Presentations

This session contains individually submitted paper presentations. Details for each paper are listed in the subsessions below.

Paper D09a

3:50–4:05 PM

Title: *Individual Differences in Meditation Experience and Engagement Predict Cell Aging Outcomes During Intensive Retreat*

Presenter: Quinn Conklin, *University of California, Davis*

Authors: Q Conklin, B King, A Zanesco, J Lin, E Epel, and C Saron

Abstract: Telomeres are repetitive sequences of DNA that protect the ends of eukaryotic chromosomes from degradation. Telomeres shorten during cell division and in response to psychological and physiological stress. Thus, telomere length and the enzyme telomerase, which maintains and repairs telomeres, are informative indicators of health and longevity. In a study examining participants of a one-month Insight meditation retreat, we investigated whether retreat-related changes in telomere length and telomerase activity were associated with individual differences in prior meditation experience or practice engagement during retreat. Participants reported the number of hours spent in formal practice during the study retreat, and the degree to which they felt they had practiced more diligently than their fellow retreat participants. Increases in telomere length were positively related to reports of practice diligence. However, telomerase activity at the end of retreat was inversely related to reports of practice diligence, the number of practice hours on retreat, total lifetime practice hours, and to the length of the longest retreat previously attended. Longest retreat was also inversely related to changes in telomerase, such that participants who had previously attended longer retreats (e.g., 1-3 months) showed greater declines in telomerase across the intervention. Taken together, these findings suggest that practitioners with greater meditation experience—or who are able to engage in more practice during retreat—may derive greater restorative benefits from periods of intensive practice, resulting in increased telomere length and, possibly, a lesser need for the reparative functions of telomerase.

Paper D09b

4:10–4:25 PM

Title: *Meditation Training Promotes Empathetic Engagement With Suffering Through Reductions in Vicarious Distress-related Arousal: A Mediational Analysis of Cardiovascular Correlates of Compassion*

Presenter: Brandon King, *University of California, Davis*

Author: B King

Abstract: Buddhist-based contemplative training programs aim, in large part, to alter how practitioners appraise and relate to suffering in themselves and others. Despite accumulating evidence for the prosocial benefits of meditation training, knowledge of how compassionate motivations are developed or strengthened within individuals over time is limited. I report findings from a longitudinal, wait-list controlled study of intensive training in focused-attention (shamatha) meditation. Using structural mediation analyses, I examined whether increases in regulatory control of empathic distress accounted for the association between increased feelings of empathic concern (or compassion) and attention to others' suffering. Training participants viewed evocative images of human suffering before and after a 3-month residential retreat. Compared to meditation-experienced control participants, training participants demonstrated increased heart rate orienting to suffering at the end of retreat—a pattern indicative of greater attention toward others in distress or need. Among training participants, enhanced orienting to suffering was related to increased reports of empathic concern and compassion, and decreased reports of personal distress. Critically, this relation between increased concern for others and orienting was mediated by training-related reductions in sympathetic arousal (peripheral vasoconstriction) when viewing others' suffering. Though training enabled greater allocation of attention to others' suffering, this benefit appeared to depend on practitioners' ability to down-regulate aversive arousal in the face of suffering. These findings support a process model of meditation training in which compassionate goals and motivations are facilitated through increased emotion regulation, which in turn supports the flexible allocation of attentional resources to goal-directed prosocial behavior.

Paper D09c

4:30–4:45 PM

Title: *From Using to Caring: Can Mindfulness Support a More Ethical Behaviour Towards Animals?*

Presenter: Miriam Cue Rio, *Institute of Research for Development (IRD, France)*

Authors: M Cue Rio, V Servais

Abstract: Placing animals at the bottom of the pyramid and using them to satisfy human requirements is such an old and rooted behaviour that no amount of intellectual reasoning, empirical evidence or catastrophic scenario seems to be persuasive enough to induce real change. Apart from the works of Joanna Macy (the Work That Reconnects) or Matthieu Ricard's Plea for the Animals (2016), Buddhist

and/or mindfulness scholars rarely address the issue of the animal condition, even though this has become a great and pressing concern. This paper claims that the current flourishing of mindfulness—per se and linked to all realms of human life (health, leadership, education, etc.)—can and should be used to generate the understanding needed to promote alternative ways to relate to (production) animals. The central argument is that mindfulness—understood as both the Buddhadharmā and the contemporary practices rooted in those teachings—is a relevant means to induce a more ethical behaviour towards animals. By focusing on production animals, the paper intends to capture more closely the case of those who are most directly exposed to human endeavours. It starts by describing the process and results of the semi-structured interviews conducted amongst a number of individuals enrolled in a training to become mindfulness teachers—and thus reputed to have consistent meditation practice and acceptable understanding of the Buddhist teachings. The interviews were aimed at understanding the process through which mindfulness could influence the attitude towards the use of animals. Based on both, the analysis of the interviews and theoretical considerations exploring the confluences between core Buddhist concepts and the field of animal ethics, the paper concludes by shedding some light on the process through which mindfulness is conducive to positive changes in our behaviour towards animals.

D10 - Papers

Jackrabbit

Individual Presentations

This session contains individually submitted paper presentations. Details for each paper are listed in the subsessions below.

Paper D10a

3:50–4:05 PM

Title: *Recovery From Work: The Health and Psychological Benefits of Meditation Retreats*

Presenter: Adrienne Chang, *Miami University*

Authors: A Chang, O Pichlhöfer

Abstract: Recovery from work through respite and vacations is necessary to maintain well-being and health. Failure to adequately recover from work can lead to fatigue, psychosomatic complaints, and longer sick-leave. Vacations decrease emotional exhaustion and improve mood, however, with short-lived effects. Thus, potentially additional effects of meditation programs on recovery are of broad interest. This was conducted at meditation retreat centers in Europe and North America. A survey

measuring aspects of mindfulness, stress, and psychological well-being was completed by participants (n=62) of meditation retreats of 1-week or longer and compared to results from individuals on leisure vacations (n=59) of similar duration. Assessments were conducted 10 days prior to the meditation retreat/ vacation, as well as 10 days and 66 days after the retreat/vacation. Mindfulness was assessed with the Five Factor Mindfulness Scale, and health and well-being variables were assessed by the Fatigue Assessment Scale, the Perceived Stress Scale, and the Recovery Experience Questionnaire. Participation in a residential meditation retreat of 1-week or longer, with on average 5 hours of meditation per day, leads to significant stress reduction and increased mindfulness compared to leisure vacation. Specific trait mindfulness such as acting with awareness and applying non-judgmental acceptance towards thoughts and emotions continued to increase for participants two-months after the retreat. In addition to increases in trait mindfulness, and health and well-being, participants of the meditation retreats experienced more enduring improvements compared to vacation-goers.

Paper D10b

4:10–4:25 PM

Title: *Contemplative Studies and the Liberal Arts: An Integral Relationship*

Presenter: Andrew Fort, *Texas Christian University*

Author: A Fort

Abstract: The emerging field of Contemplative Studies has made dramatic advances in many academic disciplines recently, but remains controversial in some quarters, being seen as not completely compatible with the rigorous "critical inquiry" of standard liberal arts study. While some agendas within Contemplative Studies (CS) go beyond the traditional questions and issues of liberal education, one can argue that CS has, for numerous reasons, a place at the heart of such inquiry. The case for their integral connection has not been made sufficiently by CS advocates, and will be formulated in this paper. While the focus here is CS's value in liberal arts humanities, it is easily generalizable to other arts and science disciplines. My paper will first define liberal education, focusing on aspects of critical thinking, reflective self-awareness, and value clarification, and will show that contemplative study and practice fit well in traditional liberal arts training. It then turns to offering an array of reasons about how contemplative study and practice can enhance such education by broadening and deepening ways of knowing self and others in diverse cultures through 1st, 2nd, and 3rd person modes of inquiry. Such inquiry brings attention to what and how we study and opens new models and possibilities of human being and flourishing. This paper thus demonstrates the clear value of a more explicit foregrounding of CS's integral relationship with (and beyond) liberal arts education.

Paper D10c

4:30–4:45 PM

Presentation withdrawn by presenter

D11 - Papers

Rattlesnake

Individual Presentations

This session contains individually submitted paper presentations. Details for each paper are listed in the subsessions below.

Paper D11a

3:50–4:05 PM

Title: *Meditation and Stress Resilience: The Mediating Role of Self-expansion*

Presenter: Jennifer Baumgartner, *UC San Diego*

Authors: JN Baumgartner, TR Schneider

Abstract: Modulation of self-awareness is described as a goal of advanced contemplative practice. Indeed, Buddhist tenets suggest that attachment to the self is the source of human suffering. The present research investigated whether meditation expands the self, and in turn, whether self-expansion promotes stress resilience. Meditators and people interested in meditation, but without experience, reported self-other overlap and saliency of body boundaries for calculation of a selflessness variable and then engaged with a validated psychosocial stressor. After receiving stressor instructions to perform vocal serial subtractions for several minutes, participants reported anticipatory stressor appraisals and state affect. Task performance and sympathetic activity (pre-ejection period: PEP) were recorded continuously. Analyses revealed that meditators reported greater selflessness compared to non-meditators. In response to the stressor, meditators experienced greater positive affect, performed better, and were less sympathetically active than non-meditators. There were no differences in appraisals and negative affect. Mediation analysis revealed that selflessness fully explained the relationship between meditation and greater positive affect in response to the stressor. The present research provides evidence that meditation confers salubrious stress responses, as evinced by increased positive affect, better performance, and enhanced sympathetic regulation. The present research also suggests that meditation shapes selfless perceptions, as reflected by feeling more connected to others and less bounded from the external world. This selflessness is a novel mechanism through which meditators upregulate positive emotions despite stressful events.

Paper D11b

4:10–4:25 PM

Title: *Contemplative Perspectives on Deep Ecology: "Ziran," "Zixing," and "Zizai" in Chinese Concepts of "Self"*

Presenter: Brianna Morseth, *Dharma Realm Buddhist University*

Authors: B Morseth, L Liang

Abstract: Deep ecology, a fruitful environmental movement with deep philosophical roots, proposes that all life is fundamentally equal, that human life is only one part of a vast ecosystem that sustains and must be sustained by all. "Ziran," expressed as flowing spontaneity or the natural state of being "self-so," is a key concept in Daoist philosophy that characterizes much of Chinese contemplative practice. Meanwhile, "Zixing," appearing throughout the Chinese Zen (Chan) literature, refers literally to "self-nature," while "Zizai," featured prominently in the core Mahayana Buddhist "Perfection of Wisdom" text the Heart Sutra, carries the connotation of being "at-oneself," "self-composed," or "at-ease." The Daoist and Chinese Buddhist approaches to ecology require an embodied receptivity to myriad phenomena, a wholehearted responsiveness that excludes none and includes all. These contemplative traditions recognize phenomena as dynamic processes, much like process metaphysicians such as Whitehead. In the present research paradigm which employed a mixed-methods, within-subjects design, environmentally-relevant behaviors were closely monitored and quantifiably measured among 30 international retreatants at Fo Guang Shan, a Chinese Mahayana Buddhist monastery in southern Taiwan. As a function of time on retreat at the monastery, participants exhibited heightened pro-environmental activity, as reflected by decreased food waste, increased recycling habits, and decreased electricity use. These data trends are contextualized alongside Chinese religio-cultural attitudes in the relationship between "self" and nature in the form of "Ziran," "Zixing," and "Zizai," as derived from close reading and content analysis of core classical texts in the Chinese philosophical tradition.

Paper D11c

4:30–4:45 PM

Title: *Art as Contemplative Practice: Expressive Pathways to Self-Awareness*

Presenter: Michael Franklin, *Naropa University*

Author: M Franklin

Abstract: Assuming a first and third person practitioner-researcher perspective, this presentation examines how visual art functions as a contemplative practice. The catalyst for this investigation, which was recently published by SUNY press, began during a routine doctor's visit that resulted in a cancer diagnosis at the age of 47 (Franklin, 2017). During this time, I went to a version of hell, took the trustworthy guides of art and meditation with me, and had a surprisingly meaningful time. For decades,

meditation taught me to become the witness of my mind while art literally showed me the content of my mind. Both practices taken together revealed the synergistic union that became Art as Contemplative Practice: Expressive Pathways to the Self. First, concise summaries related to meditation, yoga, and art as contemplative practice are offered (Csikszentmihalyi, 1997; Mahony, 1998 b.; Rappaport, 2013, Speeth, 1982; Trungpa, 1996). Corresponding relationships between visual art and practices like darshan and rasa theory are next addressed (Chaudhury, 1965; Coomaraswamy, 1934; Daumal, 1982; Eck, 1998; Schwartz, 2004). Lastly, art-based connections to yoga and meditation traditions are succinctly highlighted (Chapple, & Viraj, 1990; Frawley, 1994; Mookerjee & Khanna, 1977). As studies on meditation (Cahn & Polich, 2006; Davis & Hayes, 2011; Sedlmeier, Eberth, Schwarz, Zimmermann, Haarig, Jaeger, Kunze, & Chemnitz, 2012), yoga (Broad, 2012; Wallis, 2012), and aesthetic empathy (Franklin, 2010; Franklin & Grossenbacher, 2016; Goleman, 2003) exponentially increase each year, art too deserves a place at this table of historical and contemporary ideas.

D12 - Papers

Gila Monster

Individual Presentations

This session contains individually submitted paper presentations. Details for each paper are listed in the subsessions below.

Paper D12a

3:50–4:05 PM

Title: *The Dark Nights of the Soul: Nonlinear Paths in Abrahamic Contemplative Traditions*

Presenter: Nathan Fisher, *University of California, Santa Barbara*

Author: N Fisher

Abstract: This paper will present qualitative data from the Varieties of Contemplative Experience-Abrahamic (VCE-A) project investigating challenging and distressing experiences amongst contemporary meditators within Jewish, Christian, and Islamic traditions. We will explore both the phenomenology reported by practitioners and teachers as well as the interpretations or appraisals offered by both groups of such experiences. Specifically, this paper will highlight when subjects described distressing effects as "adverse" in the sense that the associated suffering was discerned to be unnecessary, or as "part of the path" in that the suffering was understood as the necessary means towards the attainment of some goal. In conclusion, we will offer some initial comparisons between this

study and the VCE Buddhist study and then allow extra time for questions and discussion of this charged and controversial topic.

Paper D12b

4:10–4:25 PM

Title: *Exploration of Somatic and Cognitive Meditation Practices Within the Body-Soteriological Pathways Model*

Presenter: Sabine Grunwald, *University of Florida*

Author: S Grunwald

Abstract: Disembodiment, alienation from self, and hyper-individualistic tendencies have been prevalent in Western culture. The body has been desacralized and shunned as impure in several major religions, ignored, devalued, and objectified in Western philosophy, and commodified as beauty or sex object in Western culture. The integration of body, mind, and life enacts the potential of a lived body, a lived mind, and lived environment from a participatory perspective. Feeling the body (body awareness), being within a body (embodiment), being in relationship with the body (participation), experiencing a larger body (cosmic body), and being body (nonduality) are perspectives that nurture more subjective and intersubjective body constructs. Embodiment has been defined as the felt sense of being localized within one's physical body and references the lived immediate experience of one's own body. This study explores body constructs along the descending, ascending, and extending body-soteriological pathways (BoSoP) model laying the foundation to identify their potential for transbody and transpersonal transformation. The purpose is to juxtapose the role of body constructs in different meditation practices embedded within different theories/traditions: (1) Secular mindfulness-based stress reduction meditation, (2) Vipassanā meditation in Theravada Buddhism, and (3) somatic meditation in Vajrayāna Tibetan Buddhism. An exuberant richness of physical and metaphysical bodies has been recognized in these theories/traditions including the physical (gross) body, subtle body, spiritual body, rainbow body, diamond body, pure conscious light, and other bodies. How the view of bodies informs meditation practices, specifically somatic meditation, will be critically discussed with particular attention to embodiment/disembodiment and vibrant aliveness/dissociation.

Paper D12c

4:30–4:45 PM

Title: *Examining the Short-Term Anxiolytic Effect of Floatation-REST*

Presenter: Justin Feinstein, *Laureate Institute for Brain Research*

Authors: J Feinstein, S Khalsa

Abstract: Floatation-REST (Reduced Environmental Stimulation Therapy), a novel mind-body intervention which attenuates exteroceptive sensory input to the nervous system, has recently been found to reduce state anxiety across a diverse clinical sample spanning the spectrum of anxiety disorders (Feinstein et al., 2018). The present study investigated the affective and physiological changes induced by Floatation-REST, and assessed whether anxious individuals experienced any alterations in their awareness for interoceptive sensation while immersed in an environment lacking exteroceptive sensation. Using a within-subject crossover design, 37 anxious participants were randomized to undergo a 90-minute session of Floatation-REST or an exteroceptive comparison condition. Measures of self-reported affect and interoceptive awareness were collected before and after each session, and indices of blood pressure (BP) and heart rate variability (HRV) were collected during each session. Relative to the comparison condition, Floatation-REST generated a significant anxiolytic effect characterized by reductions in state anxiety and muscle tension, and increases in feelings of relaxation and serenity ($p < .001$ for all variables). Floatation-REST also elicited a significant reduction in diastolic BP ($p < .001$; mean reduction = 13 mmHG), as well as an increase in normalized high frequency HRV ($p < .05$). Finally, the float environment significantly enhanced awareness and attention for cardiorespiratory sensations ($p < .001$). Floatation-REST induced a state of physiological relaxation and heightened interoceptive awareness in an anxious clinical sample. This unique juxtaposition may be conducive for teaching anxious individuals important mindfulness skills such as the regulation of distress via sustained attention to present moment visceral sensations such as the breath.