International Congress on INTEGRATIVE Medicine & Health

May 8-11, 2018 • Baltimore, MD

ACADEMIC CONSORTIUM FOR INTEGRATIVE MEDICINE & HEALTH

CONGRESS SUMMARY REPORT

Collaboration in Action:
Advancing Integrative Health through
Research, Education, Clinical Practice and Policy

Baltimore Marriott Waterfront Hotel
Baltimore, MD

ISCMR

International Society for
Complementary Medicine Research

internationalcongress.imconsortium.org

April 28-May 1
Cleveland, OH

ACADEMIC CONSORTIUM
FOR INTEGRATIVE
MEDICINE & HEALTH

www.imconsortium.org

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*deceased

Reflections on the Congress

The **2018 Congress** in Baltimore welcomed over 900 attendees from 26 countries, including the largest number of individual members of the Consortium attending a Congress, who shared the latest updates on integrative medicine and health. Co-sponsored by the **Consortium** and **ISCMR**, the meeting's theme of "**Collaboration in Action**," came to life over four days of the latest in research, education, clinical practice and policy.

Senator Barbara Mikulski, at age 82, opened the Congress with a "Call to Action!" After recounting her personal history with acupuncture and integrative medicine (IM), and her Congressional advocacy for an office and later a center to develop stronger research on IM at the National Institutes of Health, Senator Mikulski described efforts to include integrative medicine in the Affordable Care Act. She took the audience "behind the scenes" at the U.S Congress as she and others in the Senate discussed IM. She appealed to attendees to promote health and wellness, work with local communities with the greatest need, and continue to advance access to IM. She implored the audience to build the evidence base for IM, while also moving our focus to prioritize healthy lifestyles, disease prevention, and wellness. She spoke to the importance of the "meaning" so essential in fighting for the health of others and implored members to fight on for change, to never give up, ending her speech saying, with her small, but mighty fist in the air, "May the force be with you." Attendees jumped to their feet, awarding her two standing ovations.

Dr. Tracy Guadet followed Senator Mikulski and called for a "Radical Redesign of Healthcare!" This redesign involves far more than promoting individual IM modalities. She called for a redesign that is not patient-centered, but "patient-driven," in which the health care system is designed to empower and equip people to optimize their health and wellbeing with self-care, foster skills that focus on the patient's own personal goals, and recognizes the importance of social and environmental factors as part of health. This calls for a radical shift from a "system designed around points of medical care primarily focused on disease management, to one that is based in a partnership across time focused on whole health."

Dr. Steve Woolf, building on Tracy's presentation, provided data highlighting how social determinants, such as education, housing and transportation create a complex web of factors that determine health and longevity of health. He highlighted how health is determined greatly by socioeconomic conditions (e.g., education, poverty), the physical environment, and health behaviors and encouraged the IM field to "integrate" these factors into its efforts.

> "Fascinating new research in many fields, from acupuncture to proton therapy, and much discussion about many, many more pertinent topics that will shape the rest of my medical training."

Dr. Peter Wayne encouraged everyone present to "Bring the body back into mind-body research" and proceeded to provide a convincing case that body-based measures are effective predictors for health outcomes including cognition, affective disorders, fall-risk, and all-cause mortality. Peter highlighted new technologies, including those to assess gait, and presented impressive data about the importance of posture, gait and exercise, that changed not only minds but likely the bodies of those at the Congress.

Dr. Helene Langevin shared new data on the importance of connective tissue as the "network" that connects the body's cells, tissues and organs with one another. Most important, she explained that connective tissue not only transmits mechanical forces within the musculoskeletal system but also constitutes the "terrain" where important immune responses take place. She presented the results of recent studies showing that stretching promotes the resolution of inflammation and reduces cancer growth in animal models. Her results highlight the importance of a new term for many present, "mechanobiology," in understanding the mechanisms of some of IM's physical-based treatments.

Breakfast Roundtable discussions provided rich opportunities to discuss topics of interest from medical cannabis to grappling with the challenges of raising philanthropic funding. Other roundtables provided students with the inside stories of how to navigate research and clinical careers. These open forums reflected pockets of energy and engagement within the Consortium.

During the hours between sessions and plenary lectures, attendees started their days with yoga, tai chi, stepped out to enjoy the glistening sunshine on the harbor, and closed their days at evening receptions visiting posters, exhibits, networking and experiencing the force of IM that is awakening in the Consortium.

This exceptional meeting would have never happened without so many "hands on deck" led by Congress Co-chairs, **Jeff Feldman**, **Helen Lavretsky**, and the outstanding, tireless **Program Planning Committee**.

With gratitude to the Co-Chairs and PPC,
Margaret Chesney

Congress Features

Pre-Congress Workshops

Prior to Congress, 250 attendees participated in 12 different pre-congress workshops that were selected through a peer reviewed process. These included:

- Using Health Coaching Skills to Enhance Patient Engagement & Autonomy
- Weaving Together Patient-Centered Care, Integrative Health, and Self-Care: The Whole Health Approach in Your Practice and Your Life
- Words that Harm, Words that Heal: How to Transform Language to Improve Clinical Encounters
- Non-randomized Pragmatic Controlled Trials (PCTs) supplement Randomized Controlled Trails (RCTs) in Comparative Effectiveness Research
- Developing Your Research Career: NCCIH Training and Career Development Opportunities
- Putting Different Perspectives into a Holistic Picture – How to Design an Integrative Real Patient Conference
- Smart Phone, Dumb BioMechanics. Fascia-Based Pain Relief for Modern Times
- A Little Evidence Goes a Long Way. . . How to Write a High-Quality Case Report
- Making the Business Case for Integrative Health: Practical Application of Economic Evaluation.
- Applications of Narrative Medicine for Patient Identity and Quality of Life
- Medicinal Plant Walk at Jim Duke's Green Farmacy Garden
- Honing your Clinical Research Proposal for NIH and NCCIH Funding Opportunities

Young Investigator Awards

The Academic Consortium for Integrative Medicine & Health received sponsorship from the Samueli Foundation which enabled us to offer generous awards for young investigators who presented at our 2018 International Congress on Integrative Medicine & Health in Baltimore, MD. Accepted abstract submissions by a Young Investigator as first author were considered.

Eligibility: For these awards, a Young Investigator is defined as an individual who is currently enrolled as a BA student, Masters, PhD, MD, post-docs and fellows; and must be primarily responsible for the work being done as described in the abstract. All successful applicants were required to present their work at the 2018 Congress.

Poster Sessions

This year, over 474 posters were accepted through a scientific peer review process. As a result, a large amount of research in Integrative Health was available to Congress attendees through poster sessions and receptions. Additionally, participants had the opportunity to interact with representatives from supporting organizations and exhibitors at their information tables.

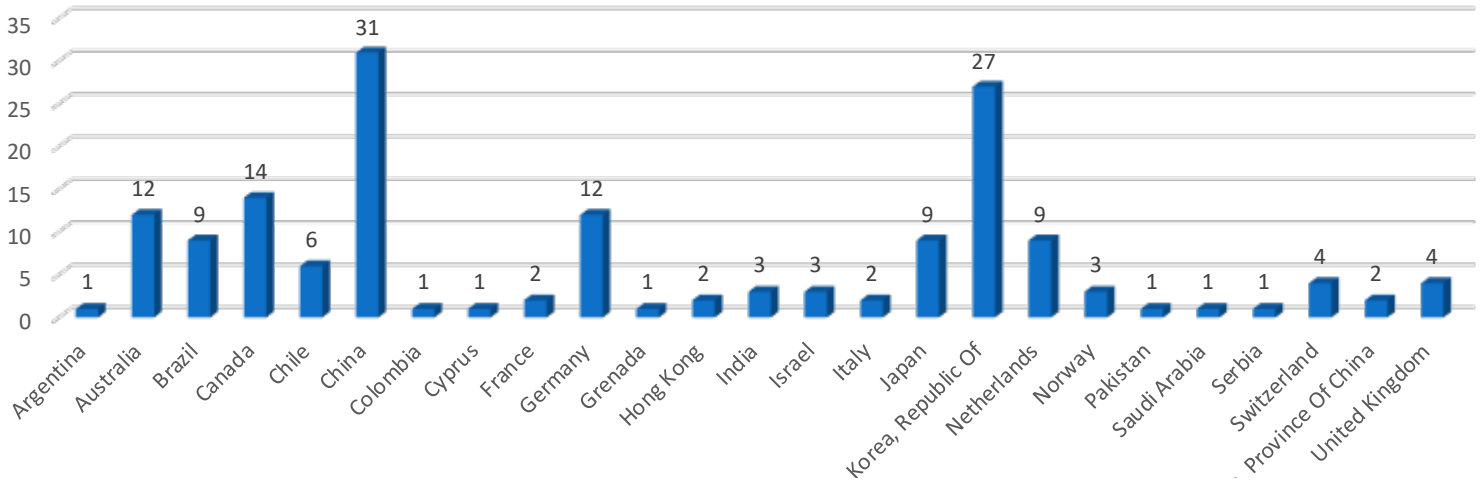
Experiential Sessions

Congress attendees were welcome to participate in various experiential sessions and offerings including Yoga, Tai Chi, and Qigong. These sessions aided in keeping the essence of Integrative Health a focus, bringing a fresh, rejuvenating start to each day.

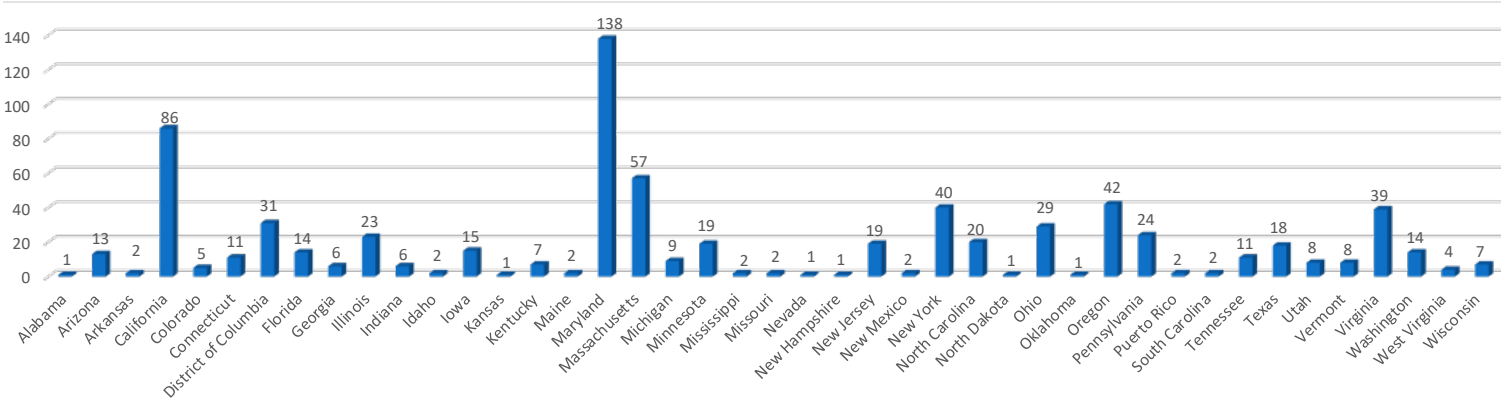
Statistics

who attended the 2018 Congress

Registrants Outside the United States



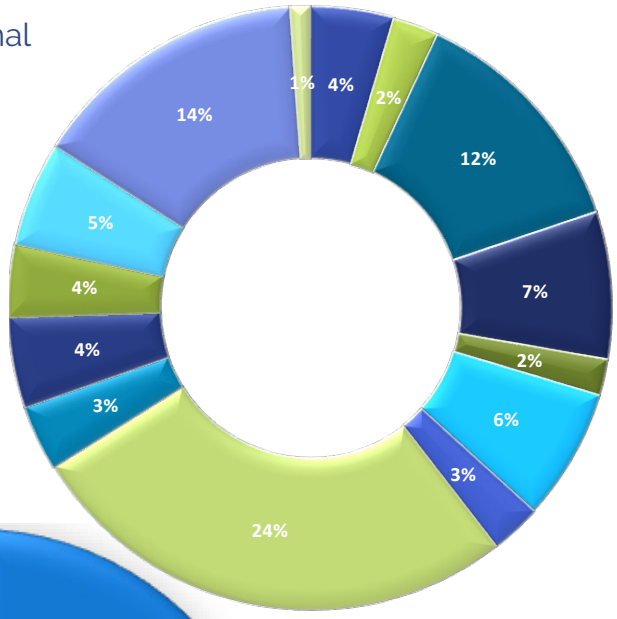
United States Registrants by State



Statistics

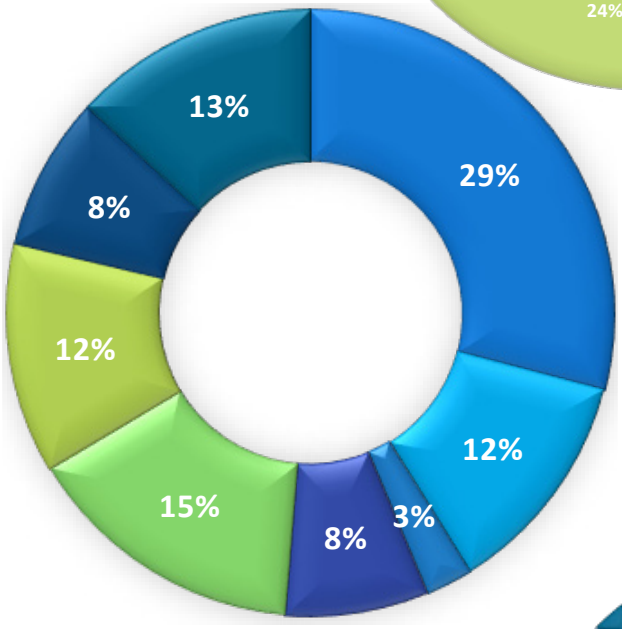
who attended the 2018 Congress

Attendees Professional Discipline



- Acupuncture - 4%
- Allied Health Services - 2%
- Behavioral/Social Sciences - 12%
- Biological & Health-Related Sciences - 7%
- Chiropractic/Chiropractic Medicine - 2%
- Does not apply - 6%
- Massage Therapy - 3%
- Medicine (Allopathic and Osteopathic) - 24%
- Naturopathic Medicine - 3%
- Nursing - 4%
- Nutrition - 4%
- Oriental Medicine - 5%
- Other - 14%
- Pharmacy - 1%
- Public Health - 9%

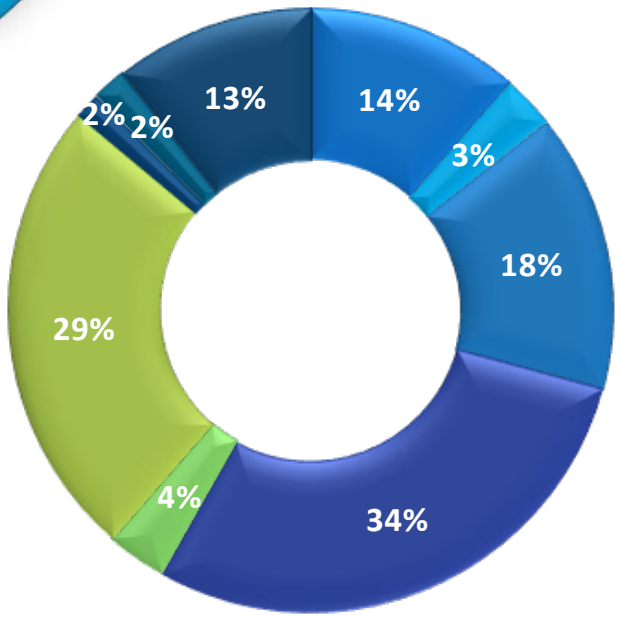
Attendees Primary Professional Role



- Academic Faculty - 29%
- Administrator - 12%
- Does Not Apply - 3%
- Other - 8%
- Practitioner - 15%
- Research Scientist - 12%
- Trainee: Fellow/Resident - 8%
- Trainee: Student - 13%

Attendees Degrees Held

(option to choose more than one)



- BS/BA - 14%
- LAc - 3%
- MA/MS/MPH - 18%
- PhD - 34%
- RN - 4%
- MD - 29%
- DC - 2%
- ND - 2%
- Other - 13%

Statistics

facts from the 2018 Congress

Over **900 participants** from **26 countries** convened in Baltimore.

The Congress had **90 oral presentations** and **474 poster presentations**.

9% of the oral presentations and **34%** of the poster presentations were presented by **students**.

784 scientific abstracts were submitted to the Congress.

90 workshops were included in the program.

The Congress accepted both **regular** and **late-breaking** abstract submissions.

77 members in the field of **integrative medicine** and **health** participated in the scientific research abstract review process.

2018 Congress Presentation Topics	Oral	Poster
Basic Science	3	10
Best case series	0	6
Citation Poster Session	0	65
Clinical skills-building	12	15
Curriculum design and development	10	16
Education Research	1	14
Faculty development/leadership	3	0
Health Services Research/Cost Effectiveness	4	14
Integrative Health and the Underserved	4	9
Integrative medicine delivery models	12	46
Interprofessional education	0	11
Manual medicine/body work (including chiropractic and massage)	4	10
Mind-body (including meditation and yoga)	13	73
Natural products/botanicals/supplements	4	33
Patient-Centered Outcomes Research	3	16
Research Methodology	2	28
State of the science/evidence base for integrative modalities	9	53
Teaching, learning, and assessment	3	6
Whole systems and acupuncture (including TCM and Ayurveda)	3	49
Grand Total	90	474

> "I loved the cutting edge research and new ideas. The positive embracing of complementary medicine was great."

Awards

Consortium's Bravewell Lectureship
Senator Barbara Mikulski

Ather Ali Scholarship for Naturopathic Physicians
Amanda Shallcross, ND, MPH

Elsevier TULIP Award
Amirhossein Sahebkar

Elsevier ERAIM
Esther Garcia Escamilla

Excellent Young Investigator Award
Adam Hanley, Center on Mindfulness and Integrative Health Intervention Dev
Arash Zakeresfahani, Indiana Univ School of Physical Education and Tourism Mgmt
Catherine Crawford, Icahn School of Medicine at Mount Sinai
Courtney Pickworth, National University of Natural Medicine
Dennis Anheyer, University of Duisburg-Essen
Frank Conyers, Osher Center, Brigham and Women's Hospital
Heidemarie Haller, University of Duisburg-Essen
Kirsten Wright, National College of Natural Medicine
Liqiong Wang, Beijing University of Chinese Medicine
Meg Sweeney, Scripps Center for Integrative Medicine
Melvin Donaldson, University of Minnesota
Michelle Park, Tufts Medical Center
Poppy Schoenberg, Osher Center for Integrative Medicine
Qiuyun Yu, Beijing University of Chinese Medicine
Sarah Braun, Virginia Commonwealth University

Outstanding Young Investigator Award
Lara Hilton, RAND Corporation
Isabel Roth, UTHealth School of Public Health
Salvatore D'Amico, Boston University School of Medicine

ISCMR Scientific Article Prize 2017
Lesley Ward, no institution listed, Winner
Suzanna Zick, University of Michigan, Runner Up
Somnath Bhinge, Rajarambapu College of Pharmacy, Runner Up

ISCMR George Lewith Poster Prize
Isabel Roth, UT Health School of Public Health, Winner
Dennis Anhayer, University of Duisberg-Essen, Runner Up
Kirsten Wright, Oregon Health & Science Universitu, Runner Up
Ruixhue Hu, Beijing University of Chinese Medicine, Honorable Mention
Heidemarie Haller, University of Duisberg-Essen, Honorable Mention

ISCMR Marja Verhoef Lectureship Award
Helene Langevin, MD

Young Investigator Award
Adam Hanley, Ctr on Mindfulness and Integrative Health Intervention Development
Alexandra York, Maryland University of Integrative Health
Angelica D'Aiello, SUNY Stony Brook
Arash Zakeresfahani, Indiana Univ School of Physical Education and Tourism Mgmt
Ben Marx, Oregon College of Oriental Medicine
Brenna Beck, University of Maryland
Brent Leininger, University of Minnesota
Catherine Crawford, Icahn School of Medicine at Mount Sinai
Christina Luberto, Harvard Medical School
Chun Nok Lam, University of Southern California
Chun-li Lu, Beijing University of Traditional Chinese Medicine
Courtney Pickworth, National University of Natural Medicine
Dana Dharmakaya Colgan, Pacific University
Dara James, Arizona State University
Dawn Bellanti, MedStar Institute for Innovation
Deanna Befus, Wake Forest School of Medicine
Dennis Anheyer, University of Duisburg-Essen
Eric Roseen, Boston University School of Medicine
Frank Conyers, Osher Center, Brigham and Women's Hospital
Guoyan Yang, Western Sydney University
Heidemarie Haller, University of Duisburg-Essen
Isabel Roth, UTHealth School of Public Health
Kamila Osypiuk, Brigham and Women's Hospital
Kirsten Wright, National College of Natural Medicine
Lara Hilton, RAND Corporation
Lindsey Webb, Johns Hopkins Bloomberg School of Public Health
Liqiong Wang, Beijing University of Chinese Medicine
Marisa Soski, National University of Natural Medicine
Marty Boldin, Boston University
Mary Walsh Roche, Dominican College
Matthew Desrosiers, Worcester Polytechnic Institute
Maya Caruso, Oregon Health & Science University
Meg Sweeney, Scripps Center for Integrative Medicine
Megan Conlon, National College of Natural Medicine
Melvin Donaldson, University of Minnesota
Michelle Park, Tufts Medical Center
Na Huang, Beijing University of Chinese Medicine
Poppy Schoenberg, Osher Center for Integrative Medicine
Qiuyun Yu, Beijing University of Chinese Medicine
Renato Leca, Faculdade de Medicina do ABC
Romy Lauche, University of Technology Sydney
rubi gonzales, University of Texas at El Paso
Salvatore D'Amico, Boston University School of Medicine
Sarah Braun, Virginia Commonwealth University
Stefana Morgan, University of California, San Francisco
Steven Dudics, University of Maryland
Termeh Feinberg, Center for Integrative Medicine
Thais Salles Araujo, Universidade Federal de Minas Gerais
Ya-jing Zhang, Beijing University of Traditional Chinese Medicine
Zofia Kozak, University of Maryland School of Medicine

Plenary Sessions

Senator Barbara Mikulski

Senator Mikulski opened the Congress with a passionately delivered lecture about the importance of integrative medicine to health care. She traced her personal history with integrative medicine, which compelled her to establish the Center for Complementary and Integrative Health at the National Institutes of Health. She encouraged all of those present at the Congress to place an emphasis on healthy lifestyles and disease prevention as an integral part of integrative medicine. She also stressed the importance of bringing integrative health to people in their communities, including those who are often underserved. She highlighted how meaningful it has been for her to fight to help others gain access to integrative medicine, and by doing so, experience enhanced wellness.

After her presentation, Margaret Chesney and Robert Saper presented Senator Mikulski with the Bravewell Leadership Award on behalf of the Academic Consortium for Integrative Medicine and Health in recognition for her advocacy for science, education, and public health, and especially her exceptional contributions to the field of integrative health and medicine.

About Senator Mikulski

Barbara Ann Mikulski of Maryland has dedicated her life to public service. Born and raised in Baltimore, Mikulski trained as a social worker. She won her first election to the Baltimore City Council in 1971 and five years later, won a seat in the U.S. House of Representatives. Elected to the U.S. Senate in 1986, Mikulski became the second woman in the nation's history to serve in both chambers. Senator Mikulski championed the Lilly Ledbetter Fair Pay Act, helped establish the Office of Research on Women's Health at the National Institutes of Health, worked to expand access to higher education and protect the final resources of the nation's seniors, and supported investments in research and innovation, including the Hubble Space Telescope. In 2011 Mikulski became the longest-serving female senator and the following year, the longest-serving woman in Congress. She was also the first woman to chair the powerful Senate Committee on Appropriations. Upon her retirement in 2017, a colleague observed of her service: "We often talk of the lions of the Senate. Barbara Mikulski ranks among them. I will miss her fierce advocacy, her counsel, her commitment, her tenacity, and her grit." (US Senate Featured Biography)

The Radical Redesign of Healthcare: The Why, What, and How

Tracy Gaudet, MD

Executive Director, Veterans Health Administration's National Office of Patient Centered Care & Cultural Transformation

The mission of the Veterans Health Administration (VHA) is "To honor America's Veterans by providing exceptional health care that improves their health and well-being." In keeping with this, VHA has made a commitment to innovate the way health care is delivered by leading the expansion of the current medical paradigm - which is historically predominantly disease-based and reactive—to one that is personalized, proactive, and patient-driven.

It is not difficult to reflect on a time, either in the course of one's practice or one's own experience of health care, when the typical medical model fell short—when a diagnostic and procedural approach failed to identify an issue, resolve the root of the problem, or move the person closer to their own goals for well-being. In response, healthcare professionals in America have begun to examine a more comprehensive, holistic approach to health care would serve us—as both practitioners and patients—better. How, then, do we get from the current state to this patient-driven model? The core elements of this approach, as well as the demonstrations underway and the plan for national implementation across the VA were presented. Specifically, this presentation delineated the core drivers for the transformation of health care, defined the critical elements of a health care system that is designed to empower and equip people to optimize their health and well-being, and described examples of current demonstrations of this approach and lessons learned.

About Dr. Gaudet

Tracy W. Gaudet, MD, is the Executive Director of the Veterans Health Administration's (VHA) National Office of Patient Centered Care and Cultural Transformation. She received her BA degree in Psychology and Sociology from Duke University, her MD degree from Duke University, and she completed her residency in Obstetrics and Gynecology at the University of Texas in San Antonio. A recognized leader in the transformation of healthcare, she speaks nationally in public and professional venues ranging from National Academy of Medicine and Department of Defense to The Oprah Show. She was featured on the PBS nationally acclaimed special entitled "The New Medicine," and named by Shape magazine as one of the eleven women who shape the world. In July of 2011, Dr. Gaudet was recognized as one of the "Top 25 Women in Healthcare 2011" by Modern Healthcare. In October of 2013, Dr. Gaudet was featured as a Game Changer in Fortune Magazine. She was named the recipient of the 2013 Bravewell Leadership Award for her significant contributions to advancing the field of medicine. Dr. Gaudet is also the author of Consciously Female, a book on integrative medicine and women's health, and Body, Soul and Baby.

How Nutrition Can Impact Gut Microbiome Composition, Intestinal Permeability and Antigen Trafficking Leading to Chronic Inflammatory Diseases

Alessio Fasano, MD

Professor of Pediatrics, Harvard Medical School; Director, Center for Celiac Research and Treatment; Chief, Division of Pediatric Gastroenterology and NutritionHow Nutrition Can

Improved hygiene leading to a reduced exposure to microorganisms have been implicated as one possible cause for the 'epidemic' of immune-mediated diseases, particularly non-infective chronic inflammatory diseases (CID), in industrialized countries during the past 3-4 decades now affecting millions of individuals. The social and financial burdens imposed by these chronic, debilitating diseases include poor quality of life, high health care costs, and substantial loss of productivity. That is the essence of the hygiene hypothesis that argues that rising incidence of these pathologies may be, at least in part, the result of lifestyle and environmental changes that have made us too "clean" for our own good. Interestingly, increase hygiene in some developing countries did not lead to an increase in CID as seen in industrializing countries, casting some doubts on the validity of the hygiene hypothesis.

Apart from genetic makeup and exposure to environmental triggers, three more elements have been recently identified being key players in the pathogenesis of CID. A third element is the inappropriate Increase in intestinal permeability, which may be influenced by the composition of the gut microbiota, has been proposed in the pathogenesis of these diseases. Intestinal permeability, together with antigen (Ag) sampling by enterocytes and luminal dendritic cells, regulates molecular trafficking between the intestinal lumen and the submucosa, leading to either tolerance or immunity to non-self Ag. This tolerance-immune response balance is influenced by the function of the immune system (both innate and adaptive immune response) as a forth element involved in the pathogenesis of CID. Finally, the composition of gut microbiome and its epigenetic influence on the host genomic expression has been identified as a fifth element in causing CID. The gut microbiome consists of more than 100 trillion microorganisms, most of which are bacteria. It has been just recently recognized that there is a close bidirectional interaction between gut microbiome and our immune system and this cross talk, particularly during infancy, is highly influential in shaping the host gut immune system function and, ultimately, the tolerance/immune response balance.

This observation led to a revisitation of the possible causes of CID epidemics. With the appreciation that the gut microbiome plays a decisive role in either generating (mucosal) tolerance or leading the way to the development of inflammatory conditions, alternative hypothesis have been formulated. There is growing evidence that many CID are characterized by a change in microbiome composition. While factors such as modality of deliver, neonatal feeding regimens, use of antibiotics, infections can influence microbiota composition, diet is by far the most important variable affecting gut ecosystem. Therefore, re-shaping gut microbiota through dietary manipulation is becoming an extremely active area of research for the prevention or treatment of a multitude of CID. Celiac disease and autism spectrum disorders were discussed as clinical examples of this new paradigm.

About Dr. Fasano

Alessio Fasano, MD, is Professor of Pediatrics at Harvard Medical School and Director of the Mucosal Immunology and Biology Research Center at MassGeneral Hospital (MGH) for Children. Dr. Fasano's current research focuses on the gut microbiome composition and function in health and disease, including autoimmune and inflammatory diseases. Dr. Fasano also directs the Center for Celiac Research and Treatment, specializing in the treatment of patients of all ages with gluten-related disorders. Trained in Naples, Italy, as a pediatric gastroenterologist, Dr. Fasano was recruited to the University of Maryland School of Medicine in 1993 where he founded the Center for Celiac Research in 1996 and authored the groundbreaking study in 2003 that established the rate of celiac disease at one in 133 Americans. In 2013, he moved to MGH, where he is chief of the Division of Pediatric Gastroenterology and Nutrition. He is also the founding co-chair of the MGH Research Institute's Microbiome Think Tank.

Connective Tissue: Putting the Body Back Together Again

Helene M. Langevin, MD

Professor in Residence of Medicine, Harvard Medical School; Director, Osher Center for Integrative Medicine, Brigham and Women's Hospital and Harvard Medical School

Connective tissue forms a whole-body network that "connects" the body's cells, tissues and organs with one another. The same connective tissue that transmits mechanical forces within the musculoskeletal system also constitutes the "terrain" where immune responses take place. Dr. Langevin's research shows that connective tissue can function as a bridge between the musculoskeletal system and the immune system. Understanding this connection helps us understand how mechanical forces produced during acupuncture, manual and movement-based therapies can influence immune processes such as inflammation. Dr. Langevin's presentation highlighted the development of methods for controlling the "dose" of forces applied to tissue in animal models which has been key to advancing this field. She also discussed how understanding connective tissue helps us overcome the artificial fragmentation of the body that handicaps modern physiology and medicine.

About Dr. Langevin

Dr. Langevin received an MD degree from McGill University, completed a post-doctoral research fellowship in Neurochemistry at the MRC Neurochemical Pharmacology Unit in Cambridge, England, residency in Internal Medicine and fellowship in Endocrinology and Metabolism at Johns Hopkins Hospital. She is a Professor in Residence of Medicine and Director of the Osher Center for Integrative Medicine at Harvard Medical School and Brigham and Women's Hospital. She is also a Visiting Professor of Neurological Sciences at the University of Vermont College of Medicine. Dr. Langevin has been the Principal Investigator of several NIH-funded studies investigating the role of connective tissue in low back pain and the mechanisms of acupuncture, manual and movement-based therapies. Her previous studies in humans and animal models have shown that mechanical tissue stimulation during both tissue stretch and acupuncture causes dynamic cellular responses in connective tissue. Her current work focuses on the effects of stretching on inflammation resolution mechanisms within connective tissue, and their relevance to chronic musculoskeletal pain and cancer.

The Need for an Integrated Approach to Understanding the Determinants of Health

Steven Woolf, MD, MPH
Professor of Family Medicine and Population Health; Director, VCU Center on Society and Health; Virginia Commonwealth University Center

Integration is important not only important to how we define health and wellness (e.g., integrative health) or deliver care (e.g., integrated team care) but also to how we understand the complex web of factors that shape health. Society tends to equate health with health care, but our health is determined greatly by health behaviors (e.g., smoking, sedentary activity), lifestyle, and stress. These in turn are shaped by upstream factors, including socioeconomic conditions (e.g., education, poverty, income inequality) and the physical and social environment in which we live. The physical environment includes not only clean air and water but also a built environment that enables active living and heathy food choices, healthy and secure housing, and affordable transportation. The social environment also affects health, as when people experience trauma or toxic stress from racism, residential segregation, exclusion, social isolation, or loneliness. Macrostructural factors—such as public policies, social values, and spending policies—function at the national, state, and local level to influence all of these downstream domains, from socioeconomic and environmental conditions to the ability of people to obtain health care or maintain healthy behaviors.

These multilevel relationships are notoriously interdependent, which means that meaningful efforts to improve population health require an integrated approach to policy and practice. For example, efforts to improve access to health care or employment cannot succeed if the people in need of these services lack stable housing, child care, or affordable transportation to reach the health care facility or jobsite. Too often, clinicians, health systems, and communities attempt to improve health by targeting a single domain. These efforts are less likely to "move the needle" than cross-sector partnerships in which stakeholders work across sectors to achieve collective impact through collaboration. Integration is hard work; it requires commitment, resources, and infrastructure. But it is essential to achieve transformational change.

About Dr. Woolf

Steven Woolf, MD, MPH, founded and served as Director of the Virginia Commonwealth University's (VCU) Center on Society and Health since he established it in 2007, until April 2018. As Director Emeritus, he continues to play a pivotal role at the Center, with a concentration on public policy issues and partnerships with colleagues and institutions devoted to population health and social justice. He is also Professor of Family Medicine and Population Health at VCU. He has published more than 150 articles in a career that has focused on evidence-based medicine, with a special focus on preventive medicine, cancer screening, quality improvement, and the role of social factors in determining health and disease. His studies demonstrate that addressing poverty, education, and the causes of racial and ethnic disparities could accomplish far more to improve the health of Americans than investing predominantly in medical technological advances. In addition to scientific publications, he brings this message to policymakers and to the public through testimony in Congress, editorials in major newspapers, web-based tools, and speeches.

> "The keynote speakers were all excellent - the best ever at the conference."

Placebos, Words and Drugs: Sharing Common Mechanisms of Action

Fabrizio Benedetti, MD

Director, Center for Hypoxia, Plateau Rosà Labs, Plateau Rosà, Italy/Switzerland; Professor, University of Turin Medical School, Neuroscience Dept, Turin, Italy

Although placebos have long been considered a nuisance in clinical research, today they represent an excellent model to understand how words and therapeutic rituals may affect the patient's brain. Placebo effects, and their evil twins, nocebo effects, are today an active and productive field of research and, because of the involvement of many mechanisms, the study of the placebo effect can actually be viewed as a melting pot of concepts and ideas for neuroscience. Indeed, there exists not a single but many placebo effects, with different mechanisms and in different systems, medical conditions, and therapeutic interventions. For example, brain mechanisms of expectation, anxiety, and reward are all involved, as well as a variety of learning phenomena, such as Pavlovian conditioning, cognitive and social learning. There is also some experimental evidence of different genetic variants in placebo responsiveness.

The most productive models to better understand the neurobiology of the placebo effect are pain and Parkinson's disease. In these medical conditions, the neural networks that are involved have been identified: that is, opioid, cannabinoid, cholecystokinin, cyclooxygenase, dopamine modulatory networks in pain and part of the basal ganglia circuitry in Parkinson's disease. Important clinical implications emerge from these recent advances in placebo research. First, as the placebo effect is basically a psychosocial context effect, these data indicate that different social stimuli, such as words and therapeutic rituals, may change the chemistry and circuitry of the patient's brain. Second, the mechanisms that are activated by placebos are the same as those activated by drugs, which suggests a cognitive/affective interference with drug action. Therefore, by taking all these data together, today we can talk of a true pharmacology and toxicology of words, whereby the unique and special interaction between the therapist and his/her patient can activate the same mechanisms that are the target of drugs.

About Dr. Benedetti

Fabrizio Benedetti, MD, is Professor of Physiology at the University of Turin Medical School, Turin, Italy, and director of the Center for Hypoxia, Plateau Rosà Labs, Plateau Rosà, Switzerland. Previously, he was consultant of the Placebo Project at the National Institutes of Health and member of the Placebo Study Group at Harvard University, and held positions at the University of California and the University of Texas. His research has identified some of the basic mechanisms of placebo responses across a variety of medical conditions, such as the involvement of endogenous opioids in placebo analgesia, as well as the neuronal circuit that is affected by placebos in Parkinson's disease. He is author of the book Placebo Effects. He is a member of The Academy of Europe and the European Dana Alliance for the Brain, as well as the recipient of the Seymour Solomon Award from the American Headache Society in 2012 and the William S Kroger Award from the American Society of Clinical Hypnosis in 2015.

Bringing the Body Back into Mind-Body Research

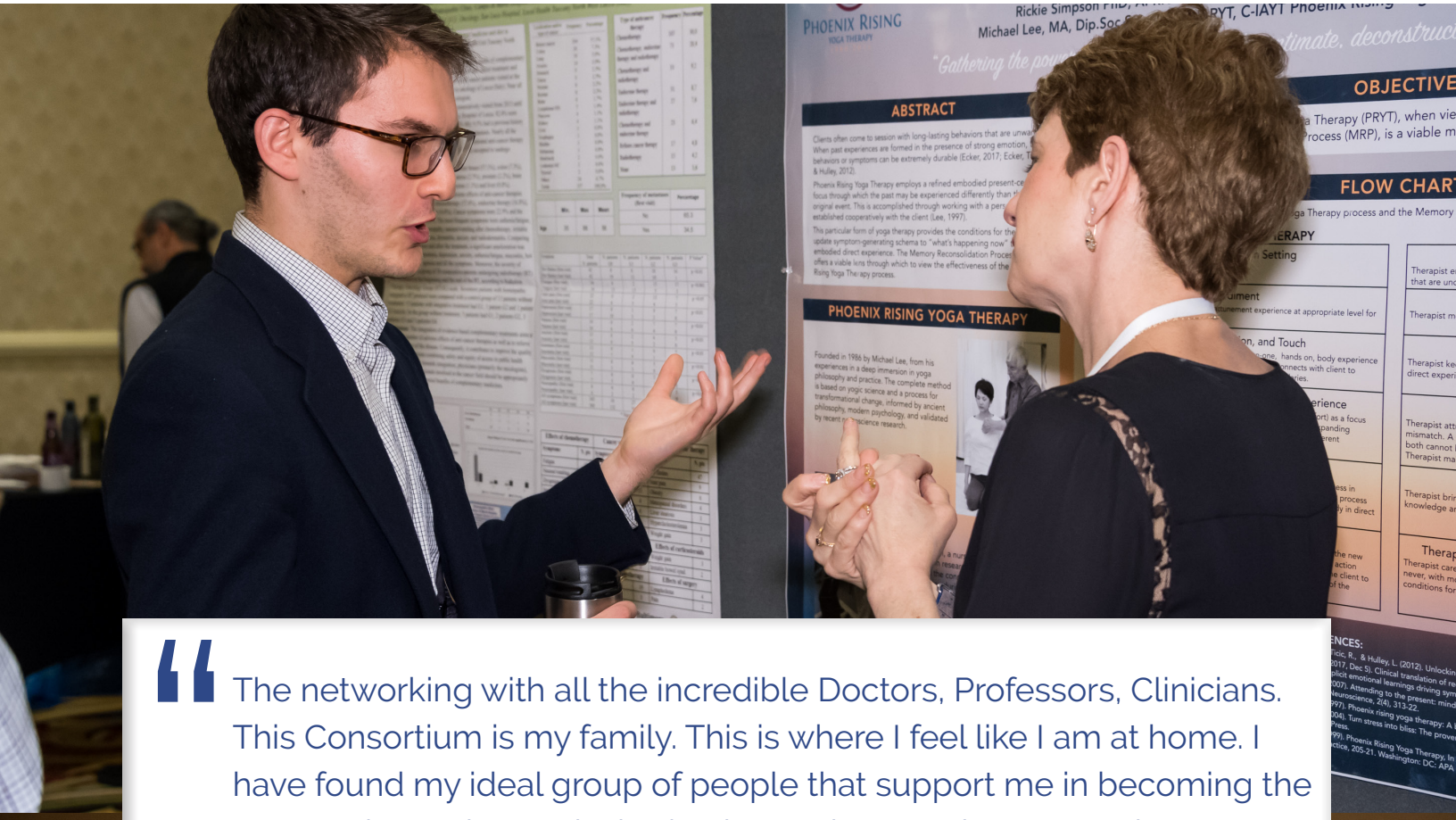
Peter Wayne, PhD

Associate Professor of Medicine, Harvard Medical School; Director of Research, Osher Center for Integrative Medicine, Division of Preventive Medicine, Brigham and Women's Hospital and Harvard Medical School

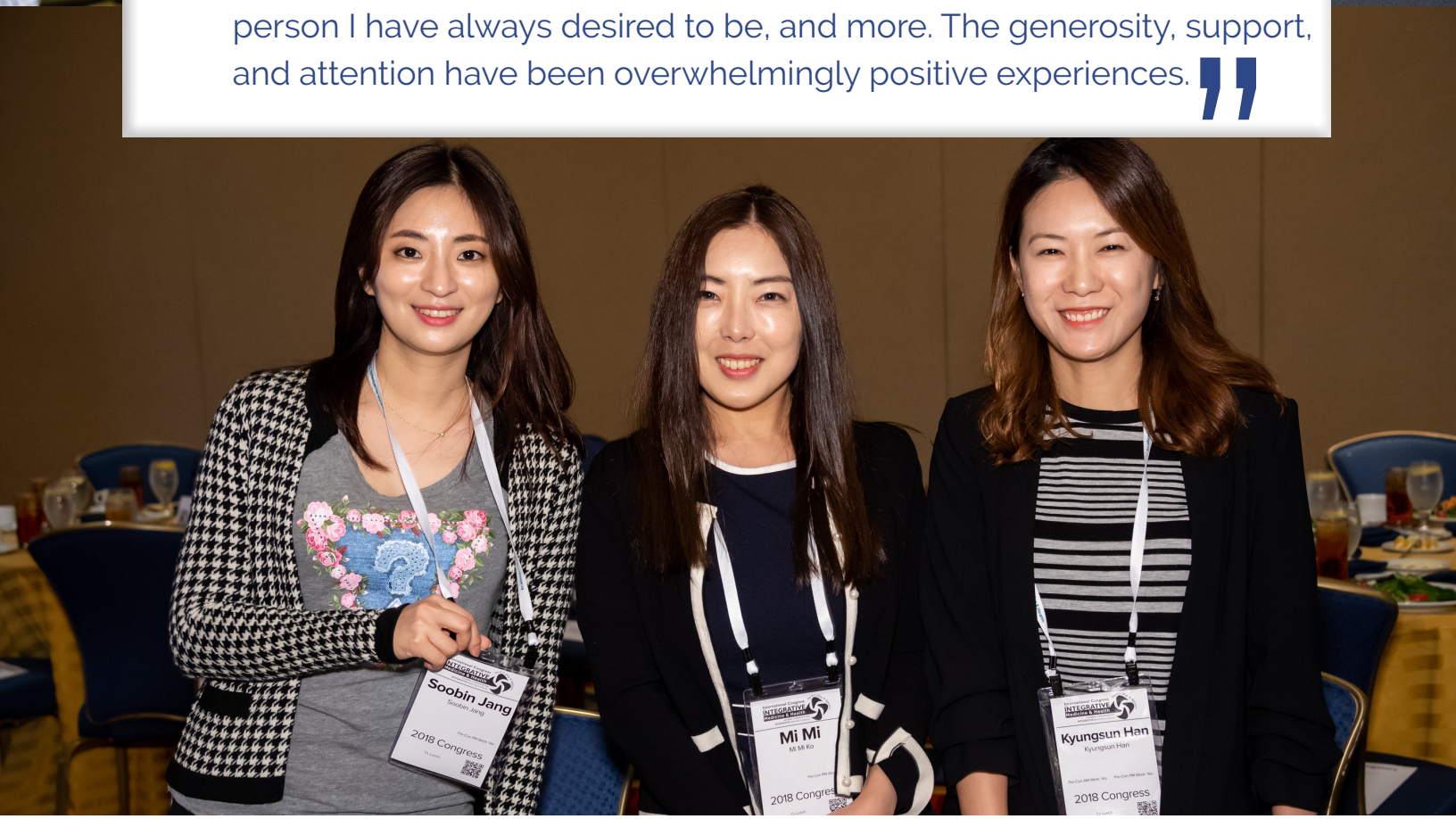
Mind-body practices have evolved to target and take advantage of the interconnectivity between the body and mind, with the goal of enhancing system-wide health. Significant progress has been made in exploring the impact of mind-body therapies on brain structure and function, clinical measures of cognition, and patient reported outcomes related to affect and quality of life. However, surprisingly little research has explored the use of practical, body-based functional outcomes to inform more holistic concepts of mind-body health. Research supports that body-based outcomes (e.g., gait speed, gait rhythm, and postural control) are effective biomarkers and predictors for multiple domains of health including cognition, affective disorders, fall-risk, heart disease and all-cause mortality. This talk drew on key principles from the field of embodied cognition to make a case for including measures of physical performance and shape to characterize overall health; and to better understand the contributions and relevance of top down processes such as executive function, attention, and affect to physical function and whole person health. Research related to the impacts of multi-modal mind-body exercises (e.g., Tai Chi and Qigong (TCQ)) on functional outcomes were summarized within an embodied cognition framework. This research included studies employing dual tasking (cognitive challenges during gait and balance tasks) which support that TCQ enhances cognitive-motor integration during activities of daily living, and studies that demonstrate that TCQ's impact on anxiety and affective disorders can be observed through quantitative and qualitative changes in gait and posture. Opportunities afforded by new technology to assess gait and other embodied outcomes in both laboratory and ecological settings, including wearable sensors and gait monitoring systems were highlighted. Challenges inherent in using multi-modal interventions for studying cross-systems outcomes were also discussed.

About Dr. Wayne

Peter Wayne, PhD, is Associate Professor of Medicine at Harvard Medical School (HMS). He is the Director of Research for the Osher Center for Integrative Medicine jointly based HMS and Brigham and Women's Hospital. The primary focus of Dr. Wayne's research is evaluating how mind-body and related complementary and integrative medicine practices clinically impact chronic health conditions, and understanding the physiological and psychological mechanisms underlying observed therapeutic effects. He has served as a principal or co-investigator on more than 25 NIH-funded studies. He has been involved in the design, conduct, analysis, and interpretation of clinical trials evaluating the safety and efficacy of Tai Chi exercise for balance disorders, Parkinson's disease, heart failure, chronic obstructive pulmonary disease, osteoporosis, cancer and depression, and trials evaluating acupuncture for stroke-related paralysis, hypertension, endometriosis, and chemoradiation-related side effects. Dr. Wayne has more than 40 years of training experience in Tai Chi and Qigong, and is an internationally recognized teacher of these practices. He is author of the Harvard Medical School Guide to Tai Chi, that was published in 2013 and which received an Award of Excellence in Medical Communication by the American Medical Writers Association.



> "The networking with all the incredible Doctors, Professors, Clinicians. This Consortium is my family. This is where I feel like I am at home. I have found my ideal group of people that support me in becoming the person I have always desired to be, and more. The generosity, support, and attention have been overwhelmingly positive experiences."



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