

## Using Manual and Conventional Therapies to Enhance Musculoskeletal Health: Highlights of The Osteopathic Research Center's 10th Anniversary Conference

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The multidisciplinary, international conference, *Using Manual and Conventional Therapies to Enhance Musculoskeletal Health*, took place in Fort Worth, Texas, from April 27 to April 29, 2012, to commemorate the 10th anniversary of the establishment of The Osteopathic Research Center (ORC). The 3-day conference, which included 20 national and international speakers, aimed to integrate emerging research findings within the manual therapy professions to improve the management of musculoskeletal disorders in an evidence-based world. Josephine Briggs, MD, director of the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health, delivered the keynote address. Dennis C. Turk, PhD, director of the Center for Pain Research on Impact, Measurement, and Effectiveness at the University of Washington, gave the inaugural Murray

Goldstein, DO Lecture Award presentation. This issue of *JAOA—The Journal of the American Osteopathic Association* provides a forum for wider dissemination of the conference presentations, particularly those with implications for osteopathic research and clinical practice. The ORC's sponsorship of this conference, including the exchange of ideas among the presenters and their respective professions, helps to advance the field of research on manual therapies and brings greater visibility to osteopathic manual treatment (OMT). The present article provides an overview of the conference as an introduction to the other articles in this theme issue of the *JAOA*.

### The Osteopathic Research Center

During the past decade, the ORC has been actively involved in hosting, chairing, and coordinating national and international conferences, symposia, and meetings. Most notable among these gatherings have been the Annual American Osteopathic Association Research Conference in 2003, 2006 (the 50th anniversary conference), 2008, and 2009; the *International Research Symposium on Somato-Visceral Interactions and Autonomic Mechanisms of Manual Therapy* in 2008, partially funded by NCCAM and 11 other sponsors; and the Osteopathic Collaborative Clinical Trials Initiatives Conference in 2005, 2007, and 2008. The 2008 *International Research Symposium* served as the basis for a multidisciplinary, international reference book in the area of manual therapy and manual medicine.<sup>1</sup>

The Osteopathic Collaborative Clinical Trials Initiatives Conference series also sought to provide education in clinical research methodology for conference attendees during its run, which ended in 2008. The ORC's mission continues to include such clinical research training as well as conference programming; however, the ORC has elected to conduct its research training independently of conference programming. The ORC established its patient-centered research fellowship program in 2010 as a mechanism for training midcareer osteopathic physicians in clinical research methodology. This led to the implementation of a 162-contact hour curriculum in 2011, in conjunction with the ORC's Consortium for Collaborative Osteopathic Research Development-Practice-Based Research Network.<sup>2</sup>

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### Using Manual and Conventional Therapies to Enhance Musculoskeletal Health

The Using Manual and Conventional Therapies to Enhance Musculoskeletal Health conference was developed to attract speakers and attendees representing the spectrum of health care practitioners commonly dealing with musculoskeletal health issues, including osteopathic and allopathic physicians, chiropractors, and physical therapists. The 4 conference objectives were to (1) convene leading multidisciplinary researchers in the fields of manual and conventional medicine; (2) explore basic physiological and psychological responses to manual therapies; (3) explore the clinical outcomes and safety of manual therapies for various musculoskeletal disorders; and (4) explore the interface between manual and conventional therapies in managing musculoskeletal disorders, including in special populations. The 20 conference speakers, their affiliations, and their presentation topics are summarized in the *Table*.

#### Keynote Address by Josephine Briggs, MD

The keynote address, entitled "Working for Musculoskeletal Health: Strategies for Rigorous Research on Manual Therapies," was delivered by Josephine Briggs, MD. She reviewed the NCCAM strategic plan for 2011-2015,<sup>3</sup> which includes the following 5 objectives: (1) advance research on mind and body interventions, practices, and disciplines; (2) advance research on complementary and alternative medicine (CAM) natural products; (3) increase understanding of "real-world" patterns and outcomes of CAM use and its integration into health care and health promotion; (4) improve the capacity of the field to carry out rigorous research; and (5) develop and disseminate objective, evidence-based information on CAM interventions.

Manual techniques such as those comprising OMT fall under NCCAM's rubric of "mind and body interventions." The latter share similar research challenges, including interventions that are often individualized, difficulty in masking patients and practitioners, reliance on subjective outcome measures, and struggles in objectively assessing purported mechanisms of action. The basic and translational research needs relating to mind and body interventions involve elucidation of biological effects and mechanisms; exploration of the roles of expectancy, patient-practitioner relationships, placebo response, and other contextual factors; characterization and documentation of interventions, treatment fidelity, and adherence; and optimization of frequency and duration of treatment.

The range of research questions to be addressed across the continuum of basic, translational, and clinical research is depicted in the *Figure*. There is a need to design and implement definitive clinical trials and real-world outcomes and effectiveness research that capitalizes on the reality that many CAM interventions are widely used by the

public. The Research Task Force on Chronic Lower Back Pain was recently established by NCCAM to focus on the development of standard language and metrics to facilitate cross-study comparisons. To help disseminate the results of relevant studies, NCCAM publishes *Clinical Digest*, a monthly e-newsletter that offers evidence-based information on CAM. Dr Briggs highlighted the July 2011 issue of *Clinical Digest*, which focused on low back pain and CAM.<sup>4</sup> Of note, with regard to OMT, this issue cited the American Osteopathic Association guidelines for OMT for patients with low back pain<sup>5</sup> and the NCCAM research spotlight that focused on OMT for back pain during the third trimester of pregnancy.<sup>6</sup>

#### Murray Goldstein, DO—A Lifetime of Achievement

The Murray Goldstein, DO Lecture Award was established by the ORC in honor of Dr Goldstein's distinguished career as an osteopathic physician, medical officer, researcher, administrator, and public servant. His biographical sketch is presented in the online appendix at <http://www.jaoa.org/content/112/9/591/suppl/DC1>. He has served in several notable roles, including the first osteopathic physician to be appointed a commissioned medical officer in the uniformed services and the first osteopathic medical officer to achieve star rank (2 stars), director of the National Institute of Neurological Disorders and Stroke at the National Institutes of Health, and assistant surgeon general in the US Public Health Service (at the rank of rear admiral).

Dr Goldstein chaired a symposium on *The Research Status of Spinal Manipulative Therapy* in 1975, conducted by the National Institute of Neurological Disorders and Stroke. He served as editor of the conference proceedings,<sup>7</sup> which set the stage for further study of manual therapies as an interdisciplinary and interprofessional collaborative research endeavor for 30 years.<sup>8</sup> *The Workshop on the Biology of Manual Therapies*,<sup>9</sup> sponsored by NCCAM in 2005, was a natural extension of his efforts to promote research in this field. Dr Goldstein issued a challenge to the profession in 1998 to immediately initiate evidence-based osteopathic medicine.<sup>10</sup> Ten years later, he was designated by the American Osteopathic Association as a Great Pioneer in Osteopathic Medicine.

**Dr Goldstein's Comments**—Before the conference, Dr Goldstein recorded the following comments, which were played for conference attendees before the inaugural award presentation:

Osteopathic research in the first half of the 20th century was primarily descriptive, based upon observation and speculation. However, the 1950s and 1960s were characterized by the studies of Denslow and Korr and their exploration of the pathophysiology of the spinal cord nidus of hypersensitivity and somatic dysfunction—the osteopathic lesion. Their

**Table.**  
**Summary of Speakers, Affiliations, and Presentation Topics at the Using Manual and Conventional Therapies to Enhance Musculoskeletal Health Conference**

Speaker	Primary Affiliation	Presentation Topic
Josephine Briggs, MD	National Center for Complementary and Alternative Medicine, National Institutes of Health	Working for Musculoskeletal Health: Strategies for Rigorous Research on Manual Therapies
John C. Licciardone, DO, MS, MBA	The Osteopathic Research Center, University of North Texas Health Science Center Texas College of Osteopathic Medicine	Spinal Manipulation for Chronic Low Back Pain: Initial Results From the OSTEOPATHIC Trial <sup>a</sup>
Gert Bronfort, DC, PhD	Wolfe Harris Center for Clinical Studies, Northwestern Health Sciences University	Efficacy and Effectiveness of Spinal Manipulation for the Treatment of Musculoskeletal Conditions
Brian C. Clark, PhD	Ohio Musculoskeletal and Neurological Institute, Ohio University Heritage College of Osteopathic Medicine	Neuromuscular Physiologic Effects of Manual Therapies in Low Back Pain <sup>a</sup>
Joel Pickar, DC, PhD	Palmer Center for Chiropractic Research, Palmer College of Chiropractic	Muscle Spindles in Lumbar Paraspinal Muscles: Their Physiology and Responses to Spinal Manipulation
Gregory Kawchuk, DC, MSc, PhD	Department of Physical Therapy, University of Alberta	Measuring the Effect of Spinal Manipulation: From Cells to Clinical Trials
Jane E. Carreiro, DO	Department of Osteopathic Manipulative Medicine, University of New England College of Osteopathic Medicine	Manual Medicine in Children
Jacek Cholewicki, PhD	Department of Surgery, Michigan State University College of Osteopathic Medicine	Challenging the Somatic Dysfunction Model: The Need for Objective Clinical Measures to Characterize Osteopathic Manipulative Medicine
Julie Fritz, PT, PhD	Department of Physical Therapy, University of Utah College of Health	Maximizing the Effectiveness of Spinal Manipulative Therapy
John J. Triano, DC, PhD	Graduate Education and Research Programs, Canadian Memorial Chiropractic College	Tissue Load Sharing: Paraspinal Myofascial Strain Patterns During Lumbar Continuous Passive Motion
Per Gunnar Brolinson, DO	Family and Sports Medicine, Edward Via College of Osteopathic Medicine—Virginia Campus	Precompetition Manipulation and Performance Among Division I Football Players <sup>a</sup>
Dennis C. Turk, PhD	Center for Pain Research on Impact, Measurement, and Effectiveness, University of Washington	Evidence-Based Practice, Meta-Analysis, and Clinical Practice Guidelines: The Good, the Bad, and the Ugly
Robert J. Gatchel, PhD	Department of Psychology, University of Texas at Arlington	Biopsychosocial Aspects of Chronic Pain Research
Steven George, PT, PhD	Center for Pain Research and Behavioral Health, University of Florida	Psychologically Informed Practice for Low Back Pain: Implications for Manual Therapy Researchers and Practitioners
David Lichtman, MD	Department of Orthopaedic Surgery, University of North Texas Health Science Center Texas College of Osteopathic Medicine	Mid-carpal Instability: Beyond Surgery
Lisa M. Hodge, PhD	The Osteopathic Research Center, University of North Texas Health Science Center Graduate School of Biomedical Sciences	Do Biomarkers Play a Role in Understanding the Mechanisms of Chronic Low Back Pain?
Michael Schneider, DC, PhD	Department of Physical Therapy, University of Pittsburgh School of Health and Rehabilitation Sciences	Fibromyalgia: A Systematic Review of the Complementary and Alternative Medicine Literature
Florian Schwerla, MSc, DO [Europe]	German Academy of Osteopathy	Osteopathic Treatment of Patients With Shoulder Pain: A Randomized Controlled Trial
Steven Vogel, DO [Europe]	British School of Osteopathy	Outcomes, Treatment Reactions, and Adverse Events: A Nationwide Study of UK Osteopathy
Richard J. Snow, DO, MPH	OhioHealth	Using the American Osteopathic Association's Clinical Assessment Program, and Challenges of Inferences in Observational Studies

<sup>a</sup> Portions of this presentation are featured in the present theme issue of *JAOA—Journal of the American Osteopathic Association*.

groundbreaking laboratory experiments documented the neuronal hypersensitivity of the neurons in an area of vertebral subluxation and the impact that manipulative therapy had on that hypersensitivity. Thus, experimental evidence for the biological basis of the osteopathic concept was documented.

Research in the 1970s and 1980s utilizing controlled clinical trial methodologies provided reliable information on the efficacy of manipulative therapy for eliminating back pain as compared to other therapies or placebo. This area of research on the role of manipulative therapy for pain relief utilizing modern methods of investigation is now attracting more attention, as are interprofessional collaborative efforts addressing it.

In recent years with the increasing enrollment of osteopathic physicians in university-based training programs, osteopathic physicians are now participants in a wide spectrum of basic and clinical research in the broad field of the biomedical sciences. Thus, biomedical research is now a steadily growing ingredient of osteopathic medicine and is rapidly becoming an integral and productive part of osteopathic academic endeavors.

One sign of this continuing increase in osteopathic attention to research is the research workshop in which we are participating today and the lectureship associated with it. I am truly honored to have this lectureship in biomedical research identified with my modest contributions to the evolution of research in the osteopathic family of endeavors. Thank you for that honor.

I am pleased that the first lecturer is Dr Dennis Turk. He establishes a standard for the Award that ensures its status in the community of research awards. Dr Turk, thank you for agreeing to accept the Lectureship Award and for sharing with us the results of your exciting research on pain. I know everyone in the audience joins me in looking forward to your presentation.

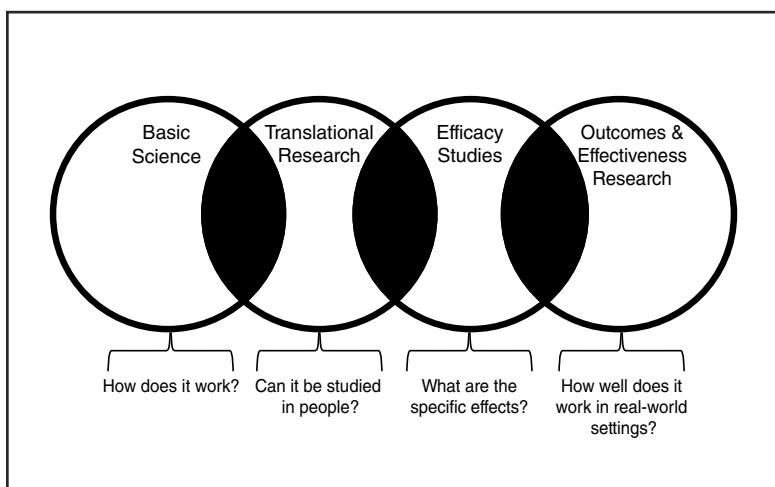
**The Murray Goldstein, DO Lecture Award Presentation by Dennis C. Turk, PhD**—The inaugural Murray Goldstein, DO Lecture Award presentation, entitled “Evidence-Based Practice, Meta-Analysis, and Clinical Practice Guidelines—The Good, the Bad, and the Ugly,” was given by Dennis C. Turk, PhD. Five steps in evidence-based practice (EBP) include (1) formulating questions to answer and identifying information needed; (2) seeking answers supported by the best evidence; (3) examining the quality of the evidence; (4) applying the evidence to implement best practice; and (5) evaluating the resulting health care practice. In judging the evidence, meta-analysis of multiple controlled studies is generally considered to be the highest quality, followed by experimental studies, quasi-experimental studies (including observational studies), nonexper-

imental studies (including correlational and descriptive studies), case reports, and expert opinion. Six criticisms of EBP are (1) inadequacies in handling the complex and interpersonal nature of clinical care; (2) difficulty in addressing diagnosis, adverse events, and prognosis; (3) heterogeneity of combined studies; (4) variability in inclusion criteria and outcome measures across studies; (5) lag time from study initiation to completion, manuscript preparation, and publication; and (6) influence of commercial interests and problems in generalizing from clinical trials to clinical practice. Thus, EBP provides information about groups, not individual patients. A question invariably arises as to the relevance of such group data to an individual patient. Further, EBP generally does not take into account patient preferences, societal values, or health care resources. There is often a reliance on statistical significance with inadequate attention to clinical relevance, as measured by the minimally important difference. Unfortunately, reviews frequently conclude that studies are of insufficient quality, treatment effects are too small, and more and better research is needed. Dr Turk concluded that EBP is an important tool, although it can be overused and misapplied. Evidence-informed practice aims to integrate EBP while also balancing it with factors such as patient preferences, societal values, and available health care resources. Nevertheless, important questions will still remain, such as how to find the appropriate balance among these factors, how to test the processes and results of evidence-informed practice, and how to determine whether the latter supports the very rationale of EBP.

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**Figure.** The range of research questions to be addressed by the National Center for Complementary and Alternative Medicine of the National Institutes of Health. Adapted from National Center for Complementary and Alternative Medicine. Third Strategic Plan, 2011-2015: Exploring the Science of Complementary and Alternative Medicine.<sup>3</sup>

## Conference Presentations Featured in this Issue

The current theme issue of the *JAOA* provides a further exposition of the presentations made by several conference speakers, which have particular implications for osteopathic research and clinical practice. The articles address the relationships of cytokine biomarkers with somatic dysfunction and clinical outcomes of OMT in patients with chronic low back pain (speaker, John C. Licciardone, DO, MS, MBA)<sup>11</sup>; precompetition OMT and performance among college football players (speaker, Per Gunnar Brolinson, DO)<sup>12</sup>; and neuromuscular physiologic effects of manual therapies in low back pain (speaker, Brian C. Clark, PhD).<sup>13</sup>

## Conclusion

In conclusion, the Using Manual and Conventional Therapies to Enhance Musculoskeletal Health conference provided an opportunity for multidisciplinary investigators in the field of manual therapies to present their research findings. The ORC's sponsorship of this conference, including interactions among the presenters and their respective professions, helps to advance the field of research on manual therapies and brings greater visibility to OMT.

## Acknowledgments

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**Editor's Note:** In this article, the author uses the term *osteopathic manual treatment* to describe the techniques used to treat patients with somatic dysfunction. The style guidelines of *JAOA—The Journal of the American Osteopathic Association* and AOA policy prefer the term *osteopathic manipulative treatment*. Given the context of this article, the author believes that the term *osteopathic manual treatment* is more appropriate because it is more encompassing than *osteopathic manipulative treatment*.

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