## NASS 2013 Annual Report Outline

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>President’s Message</td>
</tr>
<tr>
<td>3</td>
<td>2013 Board of Directors</td>
</tr>
<tr>
<td>4</td>
<td>Membership</td>
</tr>
<tr>
<td>5</td>
<td>Continuing Medical Education</td>
</tr>
<tr>
<td>8</td>
<td>Advocacy</td>
</tr>
<tr>
<td>9</td>
<td>Medical Professionalism &amp; Innovation</td>
</tr>
<tr>
<td>10</td>
<td>Research</td>
</tr>
<tr>
<td>13</td>
<td>Health Policy &amp; Reimbursement</td>
</tr>
<tr>
<td>14</td>
<td>Exercise Committee</td>
</tr>
<tr>
<td>14</td>
<td>Governance Committee</td>
</tr>
<tr>
<td>15</td>
<td>Spine Education &amp; Research Center</td>
</tr>
<tr>
<td>16</td>
<td>Publications</td>
</tr>
<tr>
<td>18</td>
<td>2013 Recognition Awards</td>
</tr>
<tr>
<td>19</td>
<td>2013 NASS Committees</td>
</tr>
<tr>
<td>23</td>
<td>Donor Recognition</td>
</tr>
<tr>
<td>27</td>
<td>Financials</td>
</tr>
</tbody>
</table>
2013 has proven by all metrics to be another in a long series of banner years for the North American Spine Society (NASS). Members can be proud to be part of the premier spine society in the world and proud of all that has been accomplished during the past year. NASS staff and volunteers set many challenging goals and routinely surpassed expectations.

The steady growth in membership is affirmation that the vision NASS has chosen (to define quality spine care for patients) and the path we have blazed toward that goal is correct. Last year we added 1,452 new members, bringing our total membership to nearly 9,000. Each of the four Councils within NASS—Education, Research, Health Policy and Administration—worked tirelessly on behalf of the membership and our patients. Their efforts are described briefly below and in greater detail subsequently in this report.

The 28th Annual Meeting in New Orleans attracted 6,700 attendees and exhibitors. More than 900 abstracts were submitted and 201 podium presentations were featured. During the year, NASS conducted 26 additional courses and developed 32 distance learning programs for physicians and allied health providers from the U.S. and worldwide.

The Spine Journal remains the #1 spine journal with an impact factor of 3.22. SpineLine continues to be a favorite member benefit. NASS worked with the news media and used social media to educate patients and the public on the value of spine care. Staff in our new multimedia production studio created webinars, educational videos, advocacy messages and advertisements.

Advocacy staff and volunteers conducted many face-to-face meetings with congressional representatives and senators both in Washington D.C. and in home districts. NASS has personal relationships with key legislators and our advocacy arm has helped shape proposed and pending legislation. We remain hopeful that Congress will move beyond party politics in the near future and work together to implement some of these worthy ideas and suggestions. NASS worked with the American Medical Association CPT and RUC committees to recommend to CMS relative values for several new procedures and services. As a much-appreciated member benefit, the Coding Committee responded to member questions about coding issues.

Health policy and research staff and volunteers worked closely with insurance carriers to review and comment on new and revised coverage policies for procedures and services. NASS was instrumental in changing several policies to better reflect the current medical evidence. We recognized that NASS is uniquely positioned and qualified to do more than reactively comment on coverage policies written by insurance companies and private contractors. We established a new task force to proactively develop our own NASS-branded coverage policies that reflect the best evidence and practice available today. We are hopeful that these policies will be widely adopted.

All of the new health care delivery models will require us to measure our outcomes. The Research Council completed the groundwork for a NASS multidisciplinary, diagnosis-based, spine outcomes registry. The Board approved funding to begin pilot testing in 2014. NASS continues to promote quality care through development of evidence-based practice guidelines, safety alerts and interaction with government regulatory agencies. We also completed our first appropriate use criteria for cervical fusion. A mobile app for this will be available in 2014.

NASS continues to be a world leader in promoting the ethical practice of medicine. In 2013 we developed a more rigorous conflict of interest policy for committee chairs and expanded our guidelines for expert witness testimony.

We enter 2014 on a solid financial footing, yet at the same time, we funded more than $300,000 in basic science research and traveling fellowships.

We have much to be thankful for in 2013. We also face many challenges in the coming years as we are asked to provide the highest quality care for patients using untested health care delivery systems. I encourage each of you to volunteer at home and abroad, in your hospital and with NASS. Be active in health care politics. Help design and implement the best health care system possible. Leaders with clinical experience are essential. I can assure you that through these efforts, you will receive far more than you give.

Thank you all for your support, encouragement and friendship and for all you have given me during my years of service to NASS. It has been an honor and absolute pleasure to serve as your 28th president.

Charles A. Mick, MD
2013
BOARD OF DIRECTORS

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David Rothman, PhD
NASS Ethicist

Eric J. Meuhlbauer, MJ, CAE
Executive Director
As of December 31, 2013, NASS maintained a roster of 8,961 members, a growth of 11.6 percent from 2012. During the 2013 membership year, 1,452 new members were recruited.

In 2013, the Membership Review Committee implemented several new initiatives, including a tiered international dues structure that provided discounted dues to members residing in countries classified by the World Bank as low- and lower-middle income. A benefits assessment survey was issued to members in late August, and the Committee made recommendations for the development of several new benefits based on its results.
The 2013 CME calendar began with a February 1–2 Basic Lumbar Spinal Injections course for 45 attendees at the Science Care Training Lab in Phoenix, AZ.

In its second year under NASS’ direction, the Evidence & Technology Spine Summit was held February 28–March 2 at the Canyons in Park City, UT. This event featured surgical, medical and joint sessions as well as case presentations and debates. Dennis M. Murphy, Chief Operating Officer and Executive Vice President, Northwestern Memorial HealthCare was the keynote speaker. He talked about the future of health care and how more decisions will be made by hospital administrators as physicians come into the hospital setting. The summit also included medical workshops, ePosters and a technical exhibition. The 2013 event had a record attendance—203 attendees, plus 38 faculty members.

The winter Coding Update 2013: Essentials and Controversies of Spine Care Coding was canceled due to low registration.

The Evaluation and Treatment of Adult Spinal Deformity: Skull to Sacrum course took place April 4–5 and sold out with 39 attendees and 10 stations. Five companies participated with lab equipment for the course including: Medtronic, DePuy Synthes, Globus, Misonix and Orthofix. Steven Mardjetko, MD, course chairman, took over this year and updated the agenda, faculty assignments and topics. Lab demonstrations were streamed live from the lab to the auditorium, enabling the attendees to view and ask questions of the lab faculty prior to breaking out into lab stations.

The Advanced Lumbar Spinal Injections course was held March 15–16 at SERC. Co-chaired by Matthew W. Smuck, MD and Benoy V. Benny, MD, the course drew 30 attendees with eight faculty members. Sixteen states were represented along with Belgium, Canada, Iraq, Lebanon and Mexico.

The Cervical Spinal Injections course took place April 19–20 at SERC and was very successful, with 41 attendees and eight faculty for this course, chaired by E. Kano A. Mayer, MD and C. Lan Fotopoulos, MD. This course differed from the 2010 course in that attendees were not required to submit cases. Instead, a disclaimer included in the course information let potential attendees understand that this course was the most advanced.

Summer Coding Update 2013: Essentials and Controversies of Spine Care Coding was held July 19–20 at the Hotel Sax in Chicago. R. Dale Blasier, MD, FRCS(C), MBA and William Sullivan, MD co-chaired the course, which drew 91 attendees, with 68 physicians and 23 allied health professionals, which is a typical ratio for the Summer Coding Course. The evaluations were very positive.

The inaugural Summer Spine Meeting took place July 31–August 3 in Naples, Florida at the Waldorf Astoria. The meeting was very well-received by the 205 attendees. They liked the intimate format of the smaller meeting. The meeting format mirrored Spine Across the Sea, with the exception of breakout sessions and popular technique workshops in the afternoon. The meeting program committee members were Jeffrey Wang, MD; Mike Reed, PT, DPT, OCS, MTC; Roger Hartl, MD; Tom Mroz, MD; Raj Rao, MD; Joshua D. Rittenberg MD and Alan T. Villavicencio, MD.
The Introduction to Spine Surgery and Interventional Pain Management for Future Spine Surgeons and Future Interventional Pain Practitioners training course for residents and fellows took place September 13-14 at SERC. Edward Dohring, MD and Donna M. Lahey, BSN, RNFA, chaired this hands-on cadaver course. Companies participating in the lab sessions included: DePuy Synthes, Medtronic, K2M, Orthofix and Stryker. The unique feature of this course included lab rotations to both injection and surgical stations to give the 20 participating fellows a very balanced educational experience.

NASS launched 10 new live webinars in 2013 which became enduring materials after the live presentations. Several of the webinars were developed in a series by the Section on Radiology, Section on Biologics and Basic Research, and the Section on Allied Health.

28th Annual Meeting
October 9-12, 2013, New Orleans, Louisiana
The Annual Meeting continues to offer an outstanding educational experience and provide high-quality continuing medical education for its members. More than 900 abstracts were submitted for consideration. Additional concurrent sessions were added to accommodate additional symposia content and to provide additional educational opportunities. A total of 201 podium presentations and 148 ePosters were featured over the three and a half-day period. Program Chairs were: Michael Reed, PT, DPT, OCS, MTC, Matthew Smuck, MD and Eric Truemeees, MD.

The Technical Exhibition featured 319 companies and educated more than 3,100 professionals on the latest developments in equipment, supplies and services available in the spine care field. Earning more than $4 million and covering 92,200 net square feet, the Technical Exhibition featured the NASS Bistro offering hot lunches to attendees and exhibitors, the Surgical Showcase, where exhibitors could demonstrate their products on cadaveric specimens and hold training workshops, and the exercise demonstration area for learning new exercise-based therapies.
### 2013 Annual Meeting Abstract Analysis

#### Abstract Categories

<table>
<thead>
<tr>
<th>Abstract Categories</th>
<th>Total Submitted</th>
<th>Total Accepted</th>
<th>% Accepted Compared to Total Submitted</th>
<th>Total Accepted</th>
<th>% Accepted Compared to Total Submitted</th>
<th>Total Accepted</th>
<th>% Accepted Compared to Total Submitted</th>
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<td>Basic Science/Biologics</td>
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<td>41</td>
<td>43%</td>
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<tr>
<td>Biomechanics</td>
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<td>14</td>
<td>21%</td>
<td>7</td>
<td>10%</td>
<td>7</td>
<td>10%</td>
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<tr>
<td>Complications</td>
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<td>40%</td>
<td>20</td>
<td>24%</td>
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<tr>
<td>Diagnostics/Imaging</td>
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<tr>
<td>Epidemiology/Etiology</td>
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<td>9</td>
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<td>7</td>
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<td>5</td>
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<td>6</td>
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<tr>
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<tr>
<td>Surgery—Cervical</td>
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<td>Surgery—Thoracolumbar</td>
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<td>25%</td>
<td>18</td>
<td>8%</td>
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<tr>
<td>Trauma</td>
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<td>37%</td>
<td>9</td>
<td>30%</td>
<td>2</td>
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<tr>
<td>Total</td>
<td>938</td>
<td>349</td>
<td>37%</td>
<td>201</td>
<td>21%</td>
<td>148</td>
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#### Abstracts by Category: Percentage of Program

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<th>Abstract Categories</th>
<th>% Accepted Compared to Total Submitted</th>
<th>Total Accepted</th>
<th>Percentage of Program</th>
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<tr>
<td>Basic Science/Biologics</td>
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<td>Biomechanics</td>
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<td>Complications</td>
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<tr>
<td>Diagnostics/Imaging</td>
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<tr>
<td>Epidemiology/Etiology</td>
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<tr>
<td>Exercise Therapies/Functional Restoration</td>
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<td>Injections/Interventions</td>
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</tr>
<tr>
<td>Motion Preservation</td>
<td>4% (14)</td>
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<tr>
<td>Socio-Economics/Industrial/Ergonomics</td>
<td>6% (22)</td>
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<tr>
<td>Spinal Deformity</td>
<td>18% (62)</td>
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<tr>
<td>Surgery—Cervical</td>
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<tr>
<td>Surgery—Thoracolumbar</td>
<td>16% (55)</td>
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<tr>
<td>Trauma</td>
<td>3% (11)</td>
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In 2013, NASS Advocacy worked hand-in-hand with health care committees in the US House and Senate to craft legislation repealing the flawed Sustainable Growth Rate (SGR). NASS sent four formal comment letters to Congress and held many meetings with members of Congress and their staff to discuss the SGR and other issues on the advocacy agenda such as repeal of the Independent Payment Advisory Board (IPAB), medical liability reform, scope of practice concerns and private contracting. The comment letters are available on our website at: https://www.spine.org/Pages/Advocacy/WorkingForYou/FairPhysicianReimbursementSGR.aspx

Key Accomplishments:

» The NASS Advocacy Committee and several members of the NASS leadership were in Washington, DC for NASS’ Advocacy fly-in on March 13–14. The group met with Rep. James Matheson (D-UT), and Representatives Leonard Lance (R-NJ), Raul Ruiz, MD (D-CA) and William Cassidy, MD (R-LA) addressed the group. Several Capitol Hill staff members, including John Martin, Legislative Director in the office of Rep. Phil Roe, MD (R-TN) and Majority staff directors to the House Energy and Commerce, Ways and Means and Senate Finance committees also attended. The group spent the afternoon doing a round of Capitol Hill meetings with their representatives in Congress. A short documentary of the fly-in can be found at http://www.youtube.com/watch?v=7jSOwIPRLJM

» The Advocacy Committee joined the Alliance of Specialty Medicine at the annual Washington, DC fly-in on July 8-10. Speakers at the fly-in included Sen. Rand Paul, MD (R-KY), Sen. Roy Blunt (R-MO), House Ways and Means Health Subcommittee Chairman Kevin Brady (R-TX), Rep. Tom Price, MD (R-GA), Rep. Raul Ruiz, MD (D-CA), Sen. Ron Wyden (D-OR), Rep. Michael Burgess, MD (R-TX), Rep. Jim Matheson (D-UT), Rep. Bill Cassidy, MD (R-LA) as well as CMS and congressional staff. Attendees also met with their home House and Senate offices.

» Advocacy Chairman John G. Finkenberg, MD recorded short videos giving NASS membership the latest update on the SGR, NASS’ involvement with the Alliance of Specialty Medicine, and discussing the importance of meeting with members of Congress in-district. The videos were produced in-house by the NASS Medical Innovation and Professionalism team.

» NASS hosted Rep. Bill Foster (D-IL) at headquarters in Burr Ridge, IL. Rep. Foster spoke to NASS staff and toured the Spine Education and Research Center.

» Staff distributed regular updates on Washington, DC efforts through the “Spine on the Hill” monthly newsletter. In addition to written updates, NASS Advocacy podcasts have been produced and are available to NASS members online.

» Staff coordinated several in-district meetings between NASS members and their local representatives in Congress.

» We continued to support congressional outreach through the use of SpinePAC.

In 2013, NASS met with many members of Congress and their staff to discuss issues important to spine specialists.
Committee on Ethics and Professionalism
In 2013, the Committee made revisions to the following policies:

- Leadership Policy on Conflicts of Interest—to include chairs of all committees in the Level 1 category.
- Expert Witness Guidelines—to clarify that the guidelines are applicable to expert witness testimony in any arena.

The Board of Directors ruled in October 2011 to make disclosure information—in range format—available to the general public. The annual public index, published on the NASS website in the summer of 2013, includes all member disclosure information provided to NASS after February 2012.

2013 Ethics contributions to NASS publications:

- “CMS Issues Final Rule on Physician Payment Sunshine Act,” Muehlbauer E, NASS Executive Director (SpineLine, Jan/Feb 2013)
- “You Can’t Always Trust What You Read: Ghost and Guest Authors Violate Trust,” Schofferman J, Wetzel FT, Bono C. (SpineLine, May/Jun 2013)

Professional Conduct & Ethics Committee
Two cases originating in 2012 were finalized in 2013, resulting in one member being publicly censured, and the other privately admonished. Two new cases were initiated late in 2013, one will be held in abeyance pending current litigation, the other will be reviewed and a prima facie determination made in early 2014.

Conflict of Interest Review Panel
In addition to the annual review of the Board of Directors’ disclosures, approximately 10 reviews were completed (self-referred, vetting of new leadership members, etc.).

Distinction Task Force
NASS staff began phased implementation of a new program to recognize members for diligence in improving health care outcomes, with the express purpose of improving quality care for spine patients.

Professional Compliance Panel
As the largest multidisciplinary spine care organization in North America, NASS took the lead in 2013 and created the Professional Compliance Panel (PCP). The PCP ensures compliance with NASS ethics policies, and other rules and regulations incumbent upon a spine specialist. The PCP reviews and investigates reports of potential professional issues reported by members. The primary goal of the PCP is not punitive, but is rather to emphasize professional, ethical conduct and actions at all times and in all circumstances, and, when applicable to provide ethical education to our membership.

Section Development Committee
In 2013, sections began working with consultant members to act as expert advisors to further develop sections. The Committee worked to refine a process for the evolution of sections.
In 2013, the Research Council was directed by Daniel Resnick, MD, MS, Charles A. Reitman, MD, and Zoher Ghogawala, MD, FACS. The Council integrates evidence-based medicine into NASS projects and the spine field where possible. It analyzes evidence and helps provide scientific spine care information and recommendations to NASS members as well as regulatory and policy bodies.

The Council conducts regular surveillance of the spine field, reviewing information from various government, quality and regulatory sources for issues of relevance, as well as from the American Medical Association (AMA) and other specialty medicine-related groups. The Council provides evidence-based medicine training, literature search services and article retrieval for the society at large.

Council activities in 2013 included:

» **Advocacy and Health Policy Collaboration.** The Research Council collaborates with NASS Advocacy and Health Policy efforts, providing scientific input to NASS and the Alliance of Specialty Medicine. Issues include comparative effectiveness research, performance measurement, patient safety, regulation and health care reform issues related to quality.

» **Commentary to Support Spine.** The NASS Research Council and its committees support spine care through various projects and comments submitted to government and other bodies. These comments can be viewed on the NASS website at [https://www.spine.org/Pages/ResearchClinicalCare/QualityImprovement/ScientificPolicyComments.aspx](https://www.spine.org/Pages/ResearchClinicalCare/QualityImprovement/ScientificPolicyComments.aspx).

The Council performed the following reviews and provided commentary:

- Senate Finance/House Ways and Means Discussion Draft to Repeal and Replace the Flawed SGR Formula
- 2014 Medicare Physician Fee Schedule Proposed and Final Rules
- NQF Call for Public Comments on CMS Cost Measures: #2158 Payment-Standardized Medicare Spending Per Beneficiary (MSPB) and #2165-Payment Standardized Total Per Capita Cost Measure for Medicare Fee-for-Service Beneficiaries
- June 28th Energy and Commerce SGR Draft
- Energy and Commerce Committee’s Discussion Draft SGR Legislation
- Energy and Commerce/Ways and Means SGR Repeal Proposal
- Request for Information on the Use of Clinical Quality Measures Reported Under the Physician Quality Reporting System (PQRS), the Electronic Health Record Incentive Program and Other Reporting Programs
- AHRQ Spinal Fusion for Treating Painful Lumbar Degenerated Discs or Joints
- AAOS Unified Information Statement on Orthopaedic Surgical Safety

» **Food and Drug Administration (FDA).** The Research Council, in conjunction with the Health Policy Council, is responsible for oversight and surveillance of FDA-related issues. Dr. Bernard Pfeifer was NASS’ FDA Liaison. In 2013, NASS convened the first meeting of the Spine Forum. Multiple organizations and government agencies participated to discuss items of interest, including nine medical societies and:

- US Food & Drug Administration
- Centers for Medicare and Medicaid Services
- National Institutes for Health/National Institute for Arthritis, Musculoskeletal and Skin Diseases
- Orthopaedic Surgical Manufacturer’s Association
- Centers for Disease Control
NASS also continued its participation in the Guidelines for Prevention for Neural Injury Associated with Epidural Injection of Corticosteroids—A Consensus Statement Developed by Physicians and their Professional Medical Societies in Collaboration with the United States FDA Safe Use Initiative. In addition, Rakesh Patel, MD was nominated and accepted to the FDA Network of Experts through the AAOS nomination process.

Evidence-Based Clinical Guidelines
NASS clinical guidelines provide diagnosis and treatment information and help define quality spine care. NASS uses a transparent, evidence-based methodology, incorporating levels of evidence and grades of recommendation in its guideline development. NASS’ volunteer guideline authors are trained in evidence analysis as a requirement of participation.

Six guidelines are available for free download on the NASS website at https://www.spine.org/Pages/ResearchClinicalCare/QualityImprovement/ClinicalGuidelines.aspx:

- Diagnosis and Treatment of Lumbar Disc Herniation with Radiculopathy
- Diagnosis and Treatment of Cervical Radiculopathy from Degenerative Disorders
- Diagnosis and Treatment of Degenerative Lumbar Spondylolisthesis
- Diagnosis and Treatment of Degenerative Lumbar Spinal Stenosis
- Antibiotic Prophylaxis in Spine Surgery (revised 2013)
- Antithrombotic Therapies in Spine Surgery

In 2013, the Evidence-Based Guideline Development Committee released the lumbar disc herniation guideline and revision of the antibiotic prophylaxis guideline. Work also began on two other guideline topics: Diagnosis and Treatment of Degenerative Lumbar Spondylolisthesis (Revision) and Diagnosis and Treatment of Adult Isthmic Spondylolisthesis. These will be published in 2014.

Choosing Wisely
NASS joined the ABIM Foundation’s “Choosing Wisely” campaign and released a list of “Five Things Physicians and Patients Should Question” in spine care. The list identifies five targeted, evidence-based recommendations that can stimulate discussion and support physicians and patients in making wise choices about their care. https://www.spine.org/Pages/ResearchClinicalCare/QualityImprovement/ChoosingWisely.aspx

The NASS list was released in conjunction with the Annual Meeting. A brief video was created to introduce it to members at the meeting.

Appropriateness Criteria
NASS continued work on its first set of appropriateness criteria using a modified version of the RAND method. The first topic is cervical fusion and will be available via the NASS website and in a mobile format in 2014.

Performance Measurement
NASS is a member of the AMA-convened Physicians’ Consortium for Performance Improvement (PCPI)—the primary physician body developing performance measures for physicians. In this forum, NASS voices its position on issues related to performance measures and value-based purchasing that may affect spine care providers. Staff and NASS representatives to the Consortium, David Wong, MD, MSc, FRCS(C), Christopher P. Kauffman, MD, and Carlos Bagley, MD, represented NASS at PCPI. John E. Easa, MD, FIPP was selected to serve as a NASS representative on the newly-convened PCPI Measures Advisory Committee (MAC). The MAC was convened by the PCPI in October 2013 to advise the PCPI Executive Committee on matters related to performance measures and support activities related to the PCPI measure development methodologies.

The NASS Performance Measurement Committee hosted two educational sessions at the Annual Meeting, “Avoiding Penalties—Navigating CMS Quality Initiatives (PQRS, Physician Feedback & Value-based Modifier)” and “Selecting and Implementing EHRs.” An educational document was also created to update members on the 2013 Physician Quality Reporting System and to identify measures in that program that apply to spine. https://www.spine.org/Pages/ResearchClinicalCare/QualityImprovement/PerformanceMeasurement.aspx
Evidence-Based Medicine Training
NASS’ online, self-directed program covers the basics of evidence-based medicine (EBM) and evidence analysis. This course is designed to help practitioners improve their ability to find, appraise and use the evidence in health sciences literature. The program is available to members in conjunction with Qwogo Inc., a University of Alberta affiliated enterprise. Based on the Users' Guides to the Medical Literature, Qwogo, Inc. consolidated the material into a customized resource for NASS. Users receive continuing medical education credit for completion. Training is available to all NASS members free of charge and to nonmembers for a fee. A one-day EBM course was held in May 2013 in Burr Ridge and an additional course was held as an adjunct to the annual meeting. Both the online training and one-day course fulfill the EBM training requirement for the committees where this is required.

Patient Safety
The Patient Safety Committee continues to administer the NASS Spine Safety Alert Program, monitors government resources for patient safety-related notices that may be useful to NASS members, and distributes them via email and member publications. In 2013, the committee issued 52 notices, including 21 high-impact spine safety alerts of relevance to spine care and its providers. https://www.spine.org/Pages/ResearchClinicalCare/PatientSafety/SpineSafetyAlerts.aspx.

In addition, a multidisciplinary work group began revision of the Sign, Mark & X-ray document, which will expand into a multisociety effort. The Patient Safety Committee also drafted an educational guide on methicillin-resistant Staphylococcus aureus (MRSA) screening which will be available in 2014.

NASS Spine Registry
NASS selected a new registry vendor and began designing a diagnosis-based, multidisciplinary registry. We identified pilot sites and measures and obtained an institutional review board exemption. The pilot is planned for 15 sites and 1,000 patients.

Research Grants
Each year NASS awards research grants to applicants with the highest-quality spine-related submissions. Funding is available for general research grants, young investigators and nontraditional, nonsurgical treatment. The 2013 research grant solicitation netted 183 letters of proposal, resulting in seven invitations to submit full grant applications. Ultimately, seven grants and two fellowships were funded for a total of $300,771.

- Cryopreserved Stem Cell-derived Live Bone Mimics for Superior Spinal Arthrodesis
  Primary Investigator: Carl Gregory, PhD
  $48,555 (One-year grant)

- Deciphering the Role of Annulus Fibrosus Cells in Neuronal Ingrowth into Collagen Matrices
  Primary Investigator: Adam H. Hsieh, PhD
  $50,000 (Funding year one only of a two-year grant)

- The Role of BMP9 in Regulating the Proliferation and Survival of the Intervertebral Nucleus Pulposus Cells (NPCs)
  Primary Investigator: Tong-Chuan He, PhD
  $50,000 (One-year grant)

- Inhibition of ADAM-8 (a Disintegrin and Metalloproteinase-8) to Delay Intervertebral Disc Degeneration
  Primary Investigator: Yejia Zhang, PhD
  $48,156 (One-year grant)

- Do Human Annulus Cells Actively Try to Repel Nerve Ingrowth into the Disc?
  Primary Investigator: Helen E. Gruber, PhD
  $50,000 (Funding year one only of a two-year grant)

- Overpressure Induced Spinal Neuronal and Glial Reactivity Changes
  Primary Investigator: Srinivasu Kallakuri, PhD
  $40,000 (Funding year one only, at a reduced amount than requested, of a two-year grant)

- Inflammatory Nano-Fullerene Replace Steroids for Treatment of Disc Degeneration?
  Primary Investigator: Xudong Joshua Li, MD
  $48,875 (Second year of funding for a two-year grant)

- Research Traveling Fellowship:
  Alessandra Berton, MD
  Mayo Clinic, Rochester, MN
  $6,600

- Clinical Traveling Fellowship:
  Deb Kumar Roy, MBBS, MRCS (Ed)
  Cleveland, OH; Philadelphia, PA; Baltimore, MD
  $7,460
The Health Policy Council and Coding Committee continued to work closely with other specialties in the development, modification and valuation of CPT codes. NASS participated in surveying codes for laminectomy to provide recommended values to the American Medical Association Relative Value Update Committee (RUC), which were then forwarded to the Centers for Medicare & Medicaid Services for consideration for the Medicare physician fee schedule.

The Coding Committee responded to approximately 100 member coding questions in 2013. The Committee updated Common Coding Scenarios for 2013 to reflect code changes and value adjustments, and developed new scenarios to assist in understanding appropriate coding. The Coding Committee developed a cross reference of ICD-9 to ICD-10 codes to assist members and their practices with the transition.

NASS provided expert comments on the proposed and final rules for the Medicare physician fee schedule.

NASS began participating in a multisociety pain workgroup to review and provide input on all of Noridian’s pain management coverage policies. NASS’ representatives were David O’Brien Jr, MD and William Sullivan, MD. NASS was the primary author for suggested revisions to the policies on vertebroplasty and kyphoplasty, SI joint injections and cervical epidural injections.

The Health Policy Division, encompassing the Advocacy, Health Policy and Research and Clinical Care departments, continues to produce a monthly email publication, “Health Policy Review,” that provides members with timely and useful information for succeeding in today’s health care market, including:

- legislation and regulation affecting spine care and medicine as a whole
- research and clinical care
- practice and medical coverage
- coding and reimbursement

**Coverage Task Force**

In June 2012, the NASS Board approved the formation of the Coverage Task Force to proactively review and develop credible and reasonable coverage recommendations for NASS. The Coverage Task Force is comprised of volunteer leaders from the NASS Health Policy Council, Research Council, Ethics Council, Value Task Force and Advocacy Committee.

Christopher Bono, MD, chaired the Coverage Task Force in 2013. Under his guidance and leadership, the Task Force determined the topics it would address, which range from therapeutic to diagnostic procedures, including nonoperative, interventional and surgical procedures. The Task Force members began rigorous review of scientific literature in order to develop coverage recommendations for NASS to share with payers, patients and spine care providers. The Coverage Task Force plans to publish its first set of coverage recommendations in 2014.

**Professional, Economic and Regulatory Committee**

Christopher P. Kauffman, MD, chaired the Professional, Economic and Regulatory Committee (PERC) in 2013. Under Dr. Kauffman’s leadership and guidance, the Committee reviewed 14 draft coverage policies/proposed coverage decisions for six insurance companies.

**Value Committee**

Under the leadership of David Wong, MD, MSc, FRCS(C), the Value Committee granted three value abstracts awards:

- Calculating and Defining Minimally Important Clinical Difference (MCID) and Substantial Clinical Benefit (SCB) Values for Adult Spinal Deformity (ASD): A Robust Methodology for Consistent Data Reporting
  Shay Bess, MD

- Understanding the Effect of Surgical Complication on the Value of Surgical Spine Care: Evolution of the Healthcare Value Equation
  Scott Parker, MD

- The Utility of Postoperative Radiographic Surveillance After Anterior Lumbar Interbody Fusion
  Andrew Simpson, MD

The Value Committee members developed articles on the following topic areas for *SpineLine* under Dr. Wong’s leadership:

- Experience to Date with Evolving Delivery Models
  David Polly, MD

- Value of Allied Health and Physician Extenders
  Matthew Smith, MD

- Measuring Outcomes: Process Measures vs Patient-Based Outcomes
  Sigurd H. Berven, MD

- Identifying Independent Predictors of Cost for Spine Surgery
  Sigurd H. Berven, MD

- Value of Epidural Steroid Injections
  David Wong, MD, MSc, FRCS(C)
The Governance Committee ensures that NASS has an effective governing board. The Committee identifies future leaders of the society and works to engage them in NASS activities. In addition, the Governance Committee educates new board and committee members about their duties, roles and responsibilities, and oversees new member orientation. The Committee is responsible for recognizing NASS members for their efforts in the spine care field and ensures conditions are favorable for participation in NASS activities.

» NASS hosted its second Leadership Development Program Course at the Annual Meeting. Course faculty included Mary Crane, who taught course attendees about Leadership Negotiation Skills, and David Dye, who taught course attendees how to run an effective meeting. Both speakers were well-received and we look forward to having both of them back for the 2014 Leadership Development Course.

» NASS hosted its second Committee Orientation Program Meeting at the Annual Meeting. All new committee members were invited to attend this orientation meeting. Heidi Prather, DO, Mitchel Harris, MD, FACS, and Eric Muehlbauer shared an introduction to NASS and our committee evaluation improvement project.

» NASS hosted the 5th Spine Summit Meeting, which drew 35 attendees from more than 10 spine societies. The Spine Summit Meeting is a collaborative meeting among several medical associations to act as an educational forum on each society and address common challenges in the spine care field.
The Spine Education & Research Center (SERC) can accommodate groups of all sizes and specialties for educational events, product demonstrations and trainings. With each passing year, more physicians and other health care professionals return to SERC to enhance their skills and enjoy everything the state-of-the-art facility has to offer.

**Record-Breaking Numbers**
- 70 courses—9 NASS, 61 external
- Of the 70 courses: 38% ortho spine, 19% knee, 12% neuro spine, 9% hip, 6% ankle, remaining 16% includes: shoulder, cardio, wound care, ENT and craniomaxillofacial
- Approximately 2,000 attendees attended courses at SERC in 2013

**Exciting New Developments for 2014**
- SERC is now an American Medical Education and Research Association (AMERA) member
- SERC will welcome a new Medical Director—JJ Abitbol, MD
- Plans for a lab expansion and room renovations to come in 2014
The Spine Journal

The Spine Journal (TSJ) continued to thrive in 2013 and remained the top-rated membership benefit among NASS members. In his state of the journal report at the NASS Annual Meeting, Editor in Chief, Eugene Carragee, MD outlined the editorial board’s progress on several initiatives which solidified TSJ’s position as the leading scientific spine research publication. The Journal’s appeal and integrity was reflected in its top ranking Impact Factor (3.22) making it first among spine publications and fourth among orthopedic titles. TSJ’s readership far outpaces other spine publications as well, with global circulation exceeding 7,000, nearly triple the closest competitor.

To accommodate the phenomenal rise in manuscript submissions brought about by TSJ’s success, the Editorial Board and new Managing Editor implemented significant changes to improve manuscript review efficiencies and recruited new reviewers. The resulting increase in decisions, improved turnaround times and expanded pipeline of accepted articles required higher page counts in the fourth quarter. TSJ increased from just over 100 pages each to 300+ pages, and expanded electronic pages available at www.thespinejournalonline.com.

In the annual Outstanding Paper Awards (OPA) competition, The Spine Journal and NASS recognized four papers in 2013—two in surgical science, one in medical/interventional science and one in value:

» Outstanding Paper: Medical and Interventional Science

**Does Physical Activity Influence the Relationship Between Low Back Pain and Obesity?**
Matthew W. Smuck, MD; Ming-Chih Kao, PhD, MD; Nikhraj Brar, MD; Agnes Martinez-Ith; Jongwoo Choi; Christy Tomkins-Lane, PhD

» Outstanding Paper: Value

**Comparative Outcomes and Cost Utility following Surgical Treatment of Focal Lumbar Spinal Stenosis Compared with Osteoarthritis of the Hip or Knee: Part 1. Long-Term Change in Health-Related Quality of Life. Part 2. Estimated Lifetime Incremental Cost-Utility Ratios**
Part 1: Raja Y. Rampersaud, MD, FRCSC; Stephen J. Lewis, MD; Rajiv Gandhi, MD; Roderick Davey, MD, FRCSC; Nizar Mahomed, MD.
Part 2: Raja Y. Rampersaud, MD, FRCSC; Peggy Tso, BHSc, MSc Candidate; Kevin Walker, BSc, MSc; Stephen J. Lewis, MD, FRCSC; Rajiv Gandhi, MD, FRCSC; Roderick Davey, MD, FRCSC; Nizar Mahomed, MD, ScD, FRCSC; Peter Coyte, PhD

» Outstanding Paper: Surgical Science

**Nerve Injury and Recovery after Lateral Lumbar Interbody Fusion With and Without Bone Morphogenetic Protein-2 Augmentation: A Cohort Controlled Study**
Marios G. Lykissas, MD, PhD; Alexander Aichmair, MD; Andrew A. Sama, MD; Alexander P. Hughes, MD; Darren R. Lebl, MD; Fadi Taher, MD; Frank P. Cammisa, MD; Federico P. Girardi, MD
Outstanding Paper: Surgical Science

Back Pain's Association with Vertebral Endplate Signal Changes in Sciatica
Abdelilah el Barzouhi, MD, MSc; Carmen L.A.M. Vleggeert-Lankamp, MD, PhD; Bas F. van der Kallen, MD; Geert J. Lycklama à Nijeholt, MD, PhD; Wilbert B. van den Hout, PhD; Bart W. Koes, PhD; Wilco C. Peul, MD, PhD; The Leiden – The Hague Spine Intervention Prognostic Study Group

Also, for the first time, TSJ published video OPA content featuring the winning research (available at: www.thespinejournalonline.com).

SpineLine
Medical Editor Thomas Mroz, MD and the SpineLine Editorial Board produced a strong 2013 volume of SpineLine. They successfully re-established “Curve-Countercurve” and increased the frequency of other highly-rated features, including “Spine in Sports,” “Imaging Corner,” “Lit Review Commentary” and “Perspectives.” In addition to SpineLine’s hallmark relevant clinical content, Dr. Mroz and the Board presented socioeconomic discussions, ethics perspectives, commentaries, letters to the editor and news from an expanding group of multidisciplinary contributors.

Highlights of 2013 content included:
• Evolution of Surgical Management of Spinal Tuberculosis
• Lumbar Transforaminal Epidural Steroid Injections
• Spine Care for the Underserved: A Call for Service
• Reflections: Past, Present and Future of Spine Surgery
• Does Cervical Discography Have a Role?
• Is SIJ Fusion Effective for SIJ Pain?
• Decision-Making for Bone Graft Extender Use in Lumbar Fusion
• The Neck’s Role in Sport-Related Concussion
• EMG for Spinal Stenosis?
• Ethics topics:
  » Physician Payment Sunshine Act: Strengths and Shortcomings
  » You Can’t always Trust What You Read: Ghost and Guest Authors Violate Trust
  » Ethics, Politics and Medicine

Digital Extras. SpineLine incorporated several video extras into multiple issues of digital issues (May/June, July/August, September/October) in 2013. We also developed and launched a new SpineLine mobile app for iPhone, iPad, Android and Kindle. Members responded positively; as of Oct 1, 2013, total downloads were 3,964 among 1,398 users.

Spine in Sports Highlight. Tying into a “Spine in Sports” article, “The Relationship Between Golf Swing Trunk Rotation Biomechanics and Low Back Pain in Golfers,” SpineLine hosted a successful golf swing analysis booth for attendees at the Annual Meeting. Authors were on hand to analyze swings and provide advice to attendees about their patients’ golf-related back pain.

New Editor. After a successful year at the helm, SpineLine editor Thomas Mroz, MD, moved into the NASS Education Council Chair seat at the end of 2013. We welcomed long-term editorial board member, William Sullivan, MD, as our new Medical Editor.

Patient Education Committee
The Patient Education Committee worked with the Exercise Task Force to release the Cervical Exercise brochure, which is available for purchase as a print brochure and appears in digital form on www.KnowYourBack.org. The Committee regularly updated existing information on the site and added articles on topics such as physicians’ involvement in social media. In 2013, the site added a recurring “Patient Q&A” feature where patient questions are made anonymous and answered by a member of the committee.

The Patient Education Committee also launched a patient education blog (knowyourback.wordpress.com) to incorporate seasonal articles as well as more informal pieces on evergreen topics. Patient outreach also became a priority, with NASS’ social media staff messaging patients who tweet about back pain with links to the website so they can learn more about their conditions or treatments in a credible, unbiased environment.
Public Affairs Committee
In 2013, NASS issued 11 press releases on topics such as new NASS products, position statements, awards and research. The Spine Journal issued five press releases to educate the public and spine professionals about studies in the journal and awards.

In 2013, NASS was specifically mentioned in more than 3,351 news stories, reaching an estimated audience of more than 2.2 billion people. During that same time period, The Spine Journal was featured in more than 2,794 stories, reaching more than 2 billion people.

The Public Affairs Committee raised funds for the Shriner’s Hospital for Children in Shreveport, LA. The check was presented during the 2013 Annual Meeting.

Social Media
NASS’ presence and activity on LinkedIn increased significantly in 2013. The NASS group grew to 2,692—nearly three times the participants in 2012. Discussions on topics such as minimally invasive surgery and clinical guidelines had upward of 50 comments with excellent debates. NASS’ Twitter presence also increased in 2013, to 2,341 followers. Tweets included spine-related news articles, advocacy updates and course/meeting information, which was also shared via the NASS Facebook page, which has 1,560 followers. The NASS blog gained excellent traffic on its 25 posts with about 1,300 visits.

2013 RECOGNITION AWARDS

Each year, awards are presented at the NASS Annual Meeting to individuals who were nominated by their peers for outstanding contributions to NASS and the field of spine care. These awards are named for founding members of NASS who not only made outstanding contributions to the field of spine care and research, but also played key roles in the early success of NASS.

The Leon Wiltse Award, to recognize excellence in leadership and/or clinical research in spine care, was awarded to Lawrence G. Lenke, MD, a board-certified orthopedic surgeon and the Jerome J. Gilden Distinguished Professor, Orthopedic Surgery; Chief of Orthopedic Spine Surgery; Co-Director Adult/Pediatric Scoliosis and Reconstructive Spinal Surgery and Professor of Neurological Surgery at Washington University School of Medicine.

The David Selby Award, to recognize a member who contributed greatly to the art and science of spinal disorder management through service to NASS, was awarded to Marjorie Eskay-Auerbach, MD, JD. A board-certified orthopedic surgeon and fellowship-trained spine surgeon, Dr. Eskay-Auerbach has been an active member of NASS for more than 20 years. During the course of her membership, she has served on the Research Committee, Socioeconomic Committee and as Chair of the Ethics Committee.

The Henry Farfan Award, to recognize outstanding contributions in spine-related basic science research, was awarded to Michael Fehlings, MD, PhD, FRCSC. Dr. Fehlings is a professor of Neurosurgery at the University of Toronto, holds the Krembil Chair in Neural Repair and Regeneration, is a scientist at the McEwen Centre for Regenerative Medicine and the McLaughlin Scholar in Molecular Medicine. He is currently the Medical Director of the Krembil Neuroscience Center and heads the Spinal Program at Toronto Western Hospital.
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</tr>
<tr>
<td>Accounts receivable</td>
<td>247,627</td>
<td>111,467</td>
</tr>
<tr>
<td>Other receivables</td>
<td>80,767</td>
<td>182,962</td>
</tr>
<tr>
<td>Prepaid Expenses</td>
<td>308,821</td>
<td>226,972</td>
</tr>
<tr>
<td>Inventory</td>
<td>73,076</td>
<td>80,952</td>
</tr>
<tr>
<td>Pledges receivable—net</td>
<td>-</td>
<td>61,051</td>
</tr>
<tr>
<td><strong>Total Current Assets</strong></td>
<td>15,576,640</td>
<td>14,685,116</td>
</tr>
<tr>
<td><strong>Long-term prepaid expenses</strong></td>
<td>81,072</td>
<td>80,024</td>
</tr>
<tr>
<td><strong>Net property and equipment</strong></td>
<td>10,574,637</td>
<td>11,430,525</td>
</tr>
<tr>
<td>Bond issue costs—net of amortization</td>
<td>147,992</td>
<td>159,232</td>
</tr>
<tr>
<td>Notes receivable</td>
<td>229,455</td>
<td>29,455</td>
</tr>
<tr>
<td>Investments—permanently restricted</td>
<td>1,780,552</td>
<td>1,775,552</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>$ 28,390,348</td>
<td>$ 28,159,904</td>
</tr>
<tr>
<td><strong>Liabilities and Net Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable</td>
<td>$ 133,084</td>
<td>$ 352,815</td>
</tr>
<tr>
<td>Accrued expenses</td>
<td>506,373</td>
<td>508,570</td>
</tr>
<tr>
<td>Deferred revenue</td>
<td>2,428,342</td>
<td>2,226,074</td>
</tr>
<tr>
<td>Deferred rent</td>
<td>5,532</td>
<td>-</td>
</tr>
<tr>
<td>Current portion of bonds payable</td>
<td>560,000</td>
<td>560,000</td>
</tr>
<tr>
<td><strong>Total Current Liabilities</strong></td>
<td>3,633,331</td>
<td>3,647,459</td>
</tr>
<tr>
<td><strong>Long-Term Debt</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonds payable, net of current portion</td>
<td>8,300,000</td>
<td>8,860,000</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>11,933,331</td>
<td>12,507,459</td>
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<tr>
<td><strong>Net Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unrestricted</td>
<td>13,523,556</td>
<td>12,835,465</td>
</tr>
<tr>
<td>Temporarily restricted</td>
<td>1,152,909</td>
<td>1,041,428</td>
</tr>
<tr>
<td>Permanently restricted</td>
<td>1,780,552</td>
<td>1,775,552</td>
</tr>
<tr>
<td><strong>Total Net Assets</strong></td>
<td>16,457,017</td>
<td>15,652,445</td>
</tr>
<tr>
<td><strong>Total Liabilities and Net Assets</strong></td>
<td>$ 28,390,348</td>
<td>$ 28,159,904</td>
</tr>
</tbody>
</table>
### CONSOLIDATED STATEMENTS OF ACTIVITIES

<table>
<thead>
<tr>
<th>Income</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dues and fees</td>
<td>$ 2,834,456</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 2,834,456</td>
</tr>
<tr>
<td>Sales of publications and advertising</td>
<td>449,689</td>
<td>$ -</td>
<td>$ -</td>
<td>449,689</td>
</tr>
<tr>
<td>Contributions and sponsorships</td>
<td>692,281</td>
<td>97,746</td>
<td>5,000</td>
<td>795,027</td>
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<tr>
<td>Annual Meeting and educational programs</td>
<td>7,627,788</td>
<td>$ -</td>
<td>$ -</td>
<td>7,627,788</td>
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<tr>
<td>Investment income</td>
<td>492,425</td>
<td>291,394</td>
<td>$ -</td>
<td>783,819</td>
</tr>
<tr>
<td>Rental income</td>
<td>918,325</td>
<td>$ -</td>
<td>$ -</td>
<td>918,325</td>
</tr>
<tr>
<td>Royalties</td>
<td>275,125</td>
<td>$ -</td>
<td>$ -</td>
<td>275,125</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>210,622</td>
<td>$ -</td>
<td>$ -</td>
<td>210,622</td>
</tr>
<tr>
<td>Loss on sale of assets</td>
<td>(2,039)</td>
<td>$ -</td>
<td>$ -</td>
<td>(2,039)</td>
</tr>
<tr>
<td>Net assets released from restrictions—satisfaction of program restrictions</td>
<td>277,659</td>
<td>(277,659)</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td>13,776,331</td>
<td>111,481</td>
<td>5,000</td>
<td>13,892,812</td>
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</tbody>
</table>

### Operating Expenses

<table>
<thead>
<tr>
<th>Program services</th>
<th></th>
<th></th>
<th></th>
<th>1,408,336</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member services</td>
<td>1,408,336</td>
<td>$ -</td>
<td>$ -</td>
<td>1,408,336</td>
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<tr>
<td>Publications</td>
<td>1,446,511</td>
<td>$ -</td>
<td>$ -</td>
<td>1,446,511</td>
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<tr>
<td>Grants and awards</td>
<td>391,146</td>
<td>$ -</td>
<td>$ -</td>
<td>391,146</td>
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<tr>
<td>Research and scientific affairs</td>
<td>622,006</td>
<td>$ -</td>
<td>$ -</td>
<td>622,006</td>
</tr>
<tr>
<td>Annual meeting and education</td>
<td>4,282,939</td>
<td>$ -</td>
<td>$ -</td>
<td>4,282,939</td>
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<tr>
<td>Advocacy</td>
<td>1,362,300</td>
<td>$ -</td>
<td>$ -</td>
<td>1,362,300</td>
</tr>
<tr>
<td>Spine Education &amp; Research Center</td>
<td>1,110,590</td>
<td>$ -</td>
<td>$ -</td>
<td>1,110,590</td>
</tr>
<tr>
<td><strong>Total program services</strong></td>
<td>10,623,828</td>
<td>$ -</td>
<td>$ -</td>
<td>10,623,828</td>
</tr>
<tr>
<td>Management and general</td>
<td>2,319,567</td>
<td>$ -</td>
<td>$ -</td>
<td>2,319,567</td>
</tr>
<tr>
<td>Fundraising and development</td>
<td>144,845</td>
<td>$ -</td>
<td>$ -</td>
<td>144,845</td>
</tr>
<tr>
<td><strong>Total operating expenses</strong></td>
<td>13,088,240</td>
<td>$ -</td>
<td>$ -</td>
<td>13,088,240</td>
</tr>
</tbody>
</table>

### Operating income

| Operating income                                                      | 688,091       | 111,481                | 5,000                  | 804,572   |

### Unrealized gain on interest rate swap agreement

### Change in net assets

| Change in net assets                                                  | 688,091       | 111,481                | 5,000                  | 804,572   |

### Net assets, beginning of year

| Net assets, beginning of year                                         | 12,835,465    | 1,041,428              | 1,775,552              | 15,652,445|

### Net assets, end of year

| Net assets, end of year                                               | 13,523,556    | 1,152,909              | 1,780,552              | 16,457,017|
## CONSOLIDATED STATEMENTS OF CASH FLOWS

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash flows from operating activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in net assets</td>
<td>$ 804,572</td>
<td>$ 1,800,170</td>
</tr>
<tr>
<td>Adjustments to reconcile change in net assets to net cash provided by operating activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>1,088,371</td>
<td>1,098,775</td>
</tr>
<tr>
<td>Unrealized (gain) loss on investments</td>
<td>(616,246)</td>
<td>(373,634)</td>
</tr>
<tr>
<td>Gain on Swap interest rate</td>
<td>-</td>
<td>(58,696)</td>
</tr>
<tr>
<td>Loss on disposal of assets</td>
<td>2,039</td>
<td>6,890</td>
</tr>
<tr>
<td><strong>Decrease (increase) in assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receivables</td>
<td>27,086</td>
<td>83,981</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>(82,897)</td>
<td>(46,879)</td>
</tr>
<tr>
<td>Inventory</td>
<td>7,876</td>
<td>(22,420)</td>
</tr>
<tr>
<td>Increase (decrease) in liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable</td>
<td>(219,731)</td>
<td>181,544</td>
</tr>
<tr>
<td>Accrued expenses</td>
<td>(2,197)</td>
<td>2,816</td>
</tr>
<tr>
<td>Deferred revenue</td>
<td>202,268</td>
<td>280,953</td>
</tr>
<tr>
<td>Deferred rent</td>
<td>5,532</td>
<td>-</td>
</tr>
<tr>
<td><strong>Net cash provided by operating activities</strong></td>
<td>1,216,673</td>
<td>2,953,500</td>
</tr>
</tbody>
</table>

| **Cash flows from investing activities** |               |               |
| Proceeds from sale of investments  | 3,152,715     | 2,066,654     |
| Purchase of investments            | (3,403,820)   | (2,451,116)   |
| Purchase of property and equipment | (223,282)     | (347,766)     |
| Notes receivable issued            | (200,000)     | (29,455)      |
| **Net cash used by investing activities** | (674,387)   | (761,683)     |

| **Cash flows from financing activities** |               |               |
| Payment on bonds                   | (560,000)     | (1,680,000)   |
| **Net cash used by financing activities** | (560,000)   | (1,680,000)   |

**Net increase (decrease) in cash and cash equivalents** | (17,714)      | 511,817       |

Cash and cash equivalents, beginning of year | 9,736,853     | 9,225,036     |
Cash and cash equivalents, end of year     | 9,719,139     | 9,736,853     |

**Supplemental Information**

- Unrelated business income taxes paid | 13,178        | 7,000         |
- Interest paid                      | 163,967       | $ 254,586     |