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ABSTRACTS OF PAPERS AND PRESENTATIONS
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Objects, Art, and Sound – Are Musical Instruments that Different?
Darryl Martin

Musical instruments are different from the vast majority of museum objects given the fact that they are – at least in their original conception – working objects. They are not unique in this – other artefacts such as transport vehicles, clocks, scientific instruments, and medical tools are all found in various types of museums (both general and specific), and all can be said to be removed from their original purpose.

Whereas it might – and can – be debated that some other types of working object could always be defined as “works of art,” there can be no denying that many musical instruments clearly fall into that category. Indeed, many instruments found in museums today might well have originally been built more with their “art” in mind than their “sound.”

This paper will address – from a perspective of a collection which has both playable and non-playing instruments – whether there is anything fundamentally different between instruments which differ only in that they remain in playing condition and, perhaps more relevantly, are played on a regular basis. It will draw on several examples within the collection as case studies to determine if the various museum audiences regard them differently and, if so, if it is always the case that the playable example is held to be “superior” due to the original context being preserved to some extent. This will be looked at for several types of instrument, even though for many museums it is generally keyboard instruments which are most likely to be used in public performance. It will also question whether playable historical instruments can be said to represent their original purpose, given that almost all modern performances can be easily demonstrated to contain major and fundamental differences from any historical (read “original”) performance.

Darryl Martin was born and initially educated in Perth, Western Australia, before moving to Britain in 1986. Since 1989 he has been based in Edinburgh. Initially trained as a musical instrument maker, specializing in early keyboard instruments, he then pursued a more academic approach to instrument research and commenced a PhD on the subject of English virginals, a thesis which looked at all aspects of the instrument from a

design, construction and decorative point-of-view. He was awarded his PhD by the University of Edinburgh in 2003.

Since 1990 Darryl has been involved with the Edinburgh University Collection of Historic Musical Instruments (EUCHMI), initially making technical drawings of a number of instruments and then writing catalogs, which has now amounted to all of the plucked and bowed Western instruments in the Collection. In 2004 he was appointed to the position of curator of the Musical Instrument Collections. The Collections include the non-keyboard Donaldson Collection housed (mostly) at the Reid Concert Hall, and the keyboard collections at St. Cecilia's Hall, including the Russell and Mirrey Collections. Darryl regularly gives papers at international conferences and has been widely published in British and foreign journals. Present research work includes a transcription and edition of the "Talbot Manuscript," a seventeenth-century source which discusses musical instruments that were known and used in England. A book on harpsichord making will be published at the end of June.

**Guitars, The Met, and an App:
Using Personal Handheld Devices to Deliver Musical Instrument Exhibition Content
Jayson Kerr Dobney
Metropolitan Museum of Art**

In 2011, The Metropolitan Museum of Art produced the exhibition *Guitar Heroes: Legendary Craftsmen from Italy to New York*. The exhibition featured three arch-top guitar masters from the New York City region and how their work fit into the long tradition of Italian and Italian-American stringed-instrument making. The majority of the instruments in the exhibition, made in the twentieth century, are kept in playing condition by current owners. These owners and the museum had the desire to be able to present recordings of a selection of the instruments to enhance the visitor's experience. Many of the guitars had been commercially recorded by great players of the last century from Chet Atkins to George Benson, and in some cases there was even historic video footage available. When designing the exhibition, it was therefore desirable to consider ways to integrate much of this musical content in a way that was easily discernible and understandable to our visitors.

Working with the newly formed digital media department, the curatorial department of musical instruments came to the decision that the best way to deliver this content was to create a tour, modeled navigationally on a traditional audio tour, but with the added ability to deliver video content along with audio. This paper will describe the project from its initial conception through implementation, with a focus on the challenges, critical decision points, and solutions chosen. The presentation will include content from the final program, an explanation of the navigational framework, a description of how the

program interacted with the exhibition, and finally, analytical results about the users of the programs and data gained through visitor surveys.

Jayson Kerr Dobney is the associate curator and administrator for the department of musical instruments at The Metropolitan Museum of Art. In 2011, he curated the exhibition *Guitar Heroes: Legendary Craftsmen from Italy to New York* and wrote the winter *Metropolitan Museum of Art Bulletin* of the same name. Prior to coming to the Metropolitan Museum in 2007, he was the associate director at the National Music Museum in Vermillion, South Dakota. In 2006, Jayson led a team at the National Music Museum that reconsidered its audio guide as a multimedia guide and authored a successful “Museums for America” grant from the Institute of Museum and Library Services.

Primitive Art: the Exoticism and Beauty of Non-European Musical Instruments **Patrícia Lopes Bastos**

The early anthropological and ethnological collections existing in Europe, with a long history of overseas exchange, hold musical instruments that were brought together by a variety of means and reasons. In most cases they were acquired not to be performed, but rather as relics. Objects, especially those with a strong decorative quality, were removed from their social and functional context to be displayed in exhibition cases. They became detached “things” – far from their role as music-making objects that provoke emotion and movement. Occasionally, instruments would be played for demonstration, and in this perspective sturdiness was an important factor; otherwise they were easily damaged and abandoned into a box placed at the last top shelf or at the far end of the archives, if they were lucky to have that facility to keep them. Although it would be advisable that each particular instrument should be played by an expert, frequently this was naturally not the case because of the varied characteristics of the instruments and of the collections. In general, museums tend to show their best-preserved and better-looking objects at the exhibition halls, but there are some institutions which have the possibility of showing the remainder of the collection in an equally attractive and practical condition for easy observation by the special visitor. This lecture points out different approaches and experiences of a selection of public collections in Europe regarding non-European musical instruments, from an historic and musicological perspective, and the treatment of these as works of ‘primitive’ art.

Patrícia Lopes Bastos has a PhD in music from the University of Aveiro. Through her current post-doctoral research project in Organology and Museology (FCT, Portugal) she has written a “Guide to Cataloguing and Analytical Description of Musical Instruments” and “Norms for the Preservation of Musical Instruments” as tools supporting the creation of a Database of Musical Instruments in Portugal, in which different measuring and analytical techniques are applied. Among other projects she is

involved in the study of the sound properties in archaeological settings and the acoustical analysis of musical instruments. She is the president of the National Association for Musical Instruments (ANIMUSIC-Portugal).

The Exhibited Musical Instrument through the Eye of the Beholder **Judith Dehail**

Musical instruments are a difficult objects to deal with from a museological point of view. They not only oscillate between the first two zones of James Clifford's "art-culture system" (connoisseurship/the art museum and history and folklore/the ethnographic museum) but they also embody different values: an esthetical one (being a work of art), a functional one (producing sounds), and a documentary/historical one (informing savoir-faire, techniques and practices of the past). Each of these values tends to have an equivalent importance for the general public, which differentiates musical instruments from other objects exhibited in museums. For the curator this sometimes leads to difficult decisions concerning how these particular objects should be treated in the museum setting. The complex task of choosing between these different values is the core mission of the people in charge of the conservation and restoration of the musical instruments housed in museums. However, even if one value or signification of the instrument might be privileged over the others for the purpose of a specific discourse when exhibited, I believe that the other values of the instrument do not actually disappear. They might reappear through the eyes and minds of the visitors along with other ones, seldom given space as such in museums, such as the power of objects to trigger personal memories or to create new ones. In this paper, I intend to present musical instruments as multi-faceted objects whose significance can also emerge from the intimate individual relationships between the visitor and the musical instrument, and with music. To illustrate my argumentation, I will use examples drawn from interviews that I conducted with museum and music professionals, and museum visitors in a musical instrument museum.

Judith Dehail was born in Bordeaux, France, in 1985. After studying Musicology in France (University of Bordeaux) and in the United States (University of California, Berkeley), she obtained an MA in Museum Studies from the Ecole Normale Supérieure and the University of Lyon. She is now enrolled in a joint PhD program between the University of Paris-Diderot and the Humboldt University of Berlin. Her dissertation topic focuses on musical instrument museums and their visitors, in France and in Germany. She currently lives in Berlin, where she is affiliated with the Centre Marc Bloch, a French-German Research Center for Social Sciences.

**Various Contexts – Various Meanings:
Musical Instruments in a Historic-cultural Museum Environment
Frank P. Bär
Germanisches Nationalmuseum**

The Germanisches Nationalmuseum in Nuremberg, the largest historic-cultural museum for the German-speaking lands, is in the process of a complete redesign which will continue for the next twenty years. Virtually all of the museum's collections, including musical instruments, will be integrated into exhibition units dedicated to different historical eras. The actual exhibition of musical instruments, however, shall be retained in the future. As the second of the new units realized, the permanent exhibition *Renaissance, Baroque, Enlightenment 1500–1800* will include musical instruments. Also, one of the main themes in a current research project about the nineteenth century is the culture of music with an important demand for musical instruments. Determining which instrument will go into which exhibition unit prompts discussions concerning the contextual meanings of a specific item: tool, artwork, technology carrier, precious collection object, representative item, etc. Another exciting issue will be the final interaction of the musical instrument once integrated into a new unit with works of art.

Frank P. Bär is curator of the musical instrument collection and head of the research services department in Germanisches Nationalmuseum in Nuremberg, Germany. He studied musicology and German linguistics at the University of Tübingen and holds a PhD in musicology. His main research interests are wind and keyboard instruments. His role in the recently completed European community funded project MIMO – Musical Instrument Museums Online – was coordinating the digitization of 45,000+ musical instruments in public collections. He is a member of the MIMO Core Management Group, caring for the sustainability and enhancement of the service.

**Towards an Aesthetic of the Late Eighteenth-Century English Harpsichord
Mimi S. Waitzman
Horniman Museum, London
The Benton Fletcher Collection, Fenton House, London**

Late eighteenth-century English harpsichords were produced and survive in large numbers compared to their French counterparts, yet today they are seldom found in good working order, and rarely used for recordings, or as prototypes for modern copies. The 20th-century harpsichord and early music revival shied away from these English instruments. Some of the most important modern players famously disliked them; and sweeping statements deriding their features can be found in some of the main seminal research literature.

This talk will explore the musical and social motivation for the late English harpsichord and propose an underlying aesthetic ideal for its sound, appearance and functions. It will aim to show that these harpsichords were not decadent, but rather the products of a new taste in musical composition and approach to solo keyboard music. They also served as ideal continuo instruments during a period when the role of accompaniment was changing. The largest, most complex models featured prominently in musically influential European courts, helping to pave the way for the eventual success of the English piano.

It is hoped that these observations will help initiate a reassessment of the instrument-making traditions that produced the late eighteenth-century English harpsichord, and facilitate a wider and deeper appreciation of the type itself.

Mimi S. Waitzman divides her time between two very different collections in London. She has been Curator of the Benton Fletcher Collection of Early Keyboard Instruments at Fenton House, a playing collection, for over 25 years and wrote its first catalogue to include both pictures and aural examples. In 2009 she joined the Horniman Museum as Deputy Keeper of Musical Instruments, and co-curated the Art of Harmony exhibition (2011) featuring instruments from the Victoria and Albert Museum. Mimi studied harpsichord and music history at McGill University and historical musicology at the University of Michigan.

**Harpsichord Makers, Decorators, and Amateurs in France
in the Seventeenth Century
Christine Laloue and Jean-Philippe Echard
Musée de la Musique, Paris**

The making of harpsichords and spinets, which are both musical instruments and works of art, require the participation of an instrument-maker, a painter(s), and sometimes of a cabinet maker. The commissioner should be added, whose tastes may condition the musical and visual aesthetics of the instrument. Thus one cannot simply attribute an instrument to a single person (leaving aside subsequent modifications, if present). In this paper, the interactions among these contributors to the instrument-making process are examined, based mainly on the evidence gathered from the important collection of rare seventeenth-century French harpsichords and spinets of the Musée de la Musique in Paris. The balance between individual creativities and organological constraints, within the frame of commonly recognized decorative schemes, is also discussed.

The function of the instrument defines a set of technical parameters in which variations may be developed, such as materials or techniques. Decoration, seemingly characterized by more freedom in its elaboration, still follows stylistic and technical principles. Each part of the instrument (lid, sides, soundboard, stand) may be treated in

specific manners, with recurrent decorative patterns and techniques: imitation of Asian lacquer works, landscape paintings, paintings of flowers, etc. This matter of broader-range decorative schemes, closely connected to the fields of easel paintings and decorative arts, also reveals subjects of curiosity and of scientific or even philosophical interest. For instance, soundboards painted with flowers are obviously connected with botanical collections and the *vanitas* paintings.

The making of the harpsichord, its appearance, and its presence in seventeenth-century interiors place the instrument at the intersection of technical expertise, decorative arts, and social practices. As a materialization of music and also the focus of more aesthetical attentions, the harpsichord holds a central and specific status in the interiors of *grand siècle* connoisseurs and at the French court.

Christine Laloue has a Master's degree in History (Paris-Sorbonne) and graduated in Art History (Ecole du Louvre). At the Musée de la Musique, Paris, she is in charge of harpsichords, fine arts, and archives and is currently working on the publication of a catalogue of the harpsichord collection. She has organized or taken part in various exhibitions and colloquiums, including *Archéologie et Musique* (Paris, 2002); *Figures de la passion, peinture et musique à l'âge baroque* (Paris, 2002); *Moyen Age: entre ordre et désordre* (Paris, 2004); and *Les représentations de la musique au Moyen Age* (Paris, 2005).

Jean-Philippe Echard has a Master's degree (1998) and a PhD (2010) in chemistry. He has been working at the Laboratoire de recherche et de restauration of the Musée de la Musique in Paris since 1999. He was a Charles E. Culpeper Fellow at the Scientific Department of the National Gallery of Art in Washington, DC, in 2004-5. His principal interests are the interactions between historical and material sources for the knowledge of history of varnishing and painting techniques and the methodological developments of observation and analytical techniques applied to cultural heritage artifacts.

**New Evidence on Benedetto Floriani:
A Reassessment of his Production and a Discussion
of his Decorated Instruments
Gabriele Rossi-Rognoni
University of Florence – Galleria dell'Accademia**

The name of Benedetto Floriani is presently connected to four spinets preserved in Florence (1568), Leipzig (1571), Paris (1572) and Berlin (undated). Apart from the Florence instrument, they are all elaborately decorated with phytomorphic motives inspired by Byzantine book bindings of the sixteenth century. The instrument in Berlin – unsigned, but attributed in 1991 through stylistic analysis – is also decorated with three heads on the front-board that suggest it was a gift from the court of Spain to celebrate the Medici wedding of Francesco I and Johanna of Austria in 1565. This instrument is

undocumented in the Medici inventories, but the three heads have been identified as plaster copies of two medals: one, made in 1564 by Domenico Poggini for the Medici to celebrate Francesco's wedding, the other made in 1559 with the effigy of Philipp II. Plaster casts are a very unusual decoration for a royal gift in the sixteenth century, and the quality is so poor as to suggest instead the hand of the Florentine nineteenth-century dealer Stefano Bardini. The suggestion seems confirmed by a twin instrument preserved in the Glinka museum, identical apart from the substitution of Philipp II's head with that of his father, and the signature of Marco Jadra. The heads, however, are so interlaced with the rest of the decoration to raise questions about the entire decoration and to extend these doubts to the other two decorated instruments.

Technical analysis of the proportions and of the moldings of the four instruments, however, show that they all come from the same hand, so that the attribution to Floriani is confirmed, and has led to the individuation of a fifth anonymous instrument – in the Bardini workshop in Florence – that can also be attributed to the same hand, and whose decoration is identical to the other, simpler instrument dated 1568. This decoration, moreover, corresponds exactly to the instrument individuated in an anonymous sixteenth-century painting at the Gallerie dell'Accademia in Venice, which possibly shows the very instrument (1568) now in Florence.

This paper will discuss the results of the technical investigation on the four instruments and the attribution of the fifth, sharing the evidence raised about the decorations.

Gabriele Rossi-Rognoni is researcher in the department of History of the Arts and Performance of the University of Florence, and curator of the Musical Instrument Department of the Galleria dell'Accademia in Florence. He was Andrew W. Mellon Fellow (2002) and C. Coleman and Pamela Coleman Fellow (2006) of the Metropolitan Museum in New York, Wissenschaftliche Mitarbeiter at the Stiftung für Musikforschung Preußischer Kulturbesitz in Berlin, and is vice-president of the International Committee of Musical Instrument Museums and Collections (CIMCIM) of ICOM (the International Council for Museums) and corresponding board member of the American Musical Instrument Society. His work mainly concentrates on the history of musical instruments in Europe, with particular attention to treatises (sixteenth-nineteenth century), bowed and keyboard instruments.

**Todini's Golden Harpsichord:
A Fresh Approach to its Iconography and the Evolution of its Design
Herbert Heyde
Metropolitan Museum of Art**

Winternitz interpreted the Golden Harpsichord (Metropolitan Museum of Art, New York) in the sense of Ovid's *Metamorphoses*, which focuses on Polyphemus as a violent and ugly Cyclops who killed Acis. The iconography of the Golden Harpsichord does not bear out this interpretation; violence and ugliness are absent. A new examination suggests that the iconography of Polyphemus was inspired by the *Idylls* of Theocritus. Theocritus's perception represents – in contrast to that of Ovid, Homer and Virgil – a softer, lovelorn Polyphemus who struggles with unrequited love. The setup as a multi-figure ensemble with the triumph of Galatea and the inclusion of two musical instruments was Todini's concept. The iconography of the harpsichord's frieze circles around the relationship between Venus and Galatea and can be traced back to Vittori's opera *La Galatea*.

The paper proposes that the design of the Golden Harpsichord evolved in three steps between about 1650 and 1673. The initial concept apparently was an automaton with a sordellina machine. The expansion to the later, lavish multi-sculpture ensemble with the Polyphemus-Galatea theme and the inclusion of the harpsichord was probably conceived around 1662-4, provoked by a crisis into which Todini's *Galleria armonica* plunged after 1656. The Golden Harpsichord as it survives today is not the complete ensemble as it existed between 1673 and about 1800; it is stripped of various elements, of a higher mountain for Polyphemus, of three canvases that set the ensemble into an Arcadian landscape, and of the machine to imitate Polyphemus's sordellina.

Herbert Heyde first worked in Germany, and since 1992 in the US. He served two years at the Shrine to Music Museum in Vermillion, South Dakota, and afterwards at the Metropolitan Museum of Art in New York, from which he retired in 2010. He published articles and books about classification, musical instrument making in Prussia, valve instruments, proportional design, and about other subjects. He also published catalogs of musical instruments of the Handelhaus in Halle, the Bachhaus in Eisenach and the Musikinstrumenten Museum in Leipzig. He won the Curt Sachs Award in 1991, the Christopher Monk Award in 1996, and the Anthony Baines Prize in 2008.

An Unfolding Tale: The Making and Transformation of the Golden Harpsichord

Pascale Patris and Adriana Rizzo

Metropolitan Museum of Art

The seventeenth-century Roman baroque harpsichord, commonly referred to as the Golden Harpsichord due to its highly sculptured gilded surfaces, stands as a highlight of the Department of Musical Instruments at the Metropolitan Museum of Art. It is not only a masterpiece of craftsmanship, but it is also the only surviving musical object from the Galleria Armonica, a gallery of musical instruments conceived and designed between 1650 and 1673 by Michele Todini, a musician, trombonist and organist. The Galleria was a private museum in Rome encompassing a variety of musical inventions and instruments with complex musical devices and automatons. The composition of the Golden Harpsichord is dominated by the iconographic depiction of the myth of Polyphemus' love for the sea-nymph Galatea, as told by the Hellenistic and ancient Roman tradition. The ensemble, which includes large stand-alone sculptures of Polyphemus and Galatea, has long been a subject of controversies for both the iconography and authenticity of some of its elements. Previous studies have focused on the Golden Harpsichord as a musical instrument and on its original installation in the Galleria Armonica. This paper, for the first time, tries to clarify some of the questions about the history and display of the Golden Harpsichord following a detailed investigation of the ensemble's decorative elements by way of x-radiography for the study of the assembly and instrumental analysis for characterization of the materials of the decoration. Crucial insight was gained into the making of the Golden Harpsichord and its restoration history which reflects its increasing transformation from a musical instrument into a decorative object.

Pascale Patris is a conservator in the Sherman Fairchild Center for Objects Conservation at the Metropolitan Museum of Art. Her main responsibilities are the research and treatment of painted and gilded surfaces of decorative arts. She trained in Paris, where she focused on the conservation of European decorative arts and sculpture. Since joining the museum in 1994 she has expanded her expertise in the study and interpretation of surface finishes on European and American decorative arts.

Adriana Rizzo is an associate research scientist in the Department of Scientific Research at the Metropolitan Museum of Art. Her responsibilities includes the material analysis for the study and conservation of art and archeological objects, using primarily spectroscopic, chromatographic and mass-spectrometric techniques. She graduated in chemistry and trained as a paintings conservator before joining the Metropolitan Museum of Art in 2004.

**Historical and Analytical Study Concerning Lute Varnishes
of the Italian Renaissance
Balthazar Soulier**

Although nearly all artefacts or paintings of the renaissance were coated with varnishes, only very few of them were preserved. Therefore an in-depth comparison between historical sources and material analysis of genuine varnishes cannot be undertaken. The present knowledge about renaissance finish techniques is mostly based on written sources.

In this study, we had the chance to investigate the varnishes of five recognized Italian lutes from the sixteen-century. Two lutes made in the workshop of Laux Maler (ca. 1480 -1552), now part of the collection of the Germanisches Nationalmuseum in Nürnberg, and of the Musée de la Musique in Paris. Two other lutes from the workshop of Hans Frei (ca.1505–65) and one from Vendelio Venere (ca.1520–90) are all conserved at the Kunsthistorisches Museum in Wien.

The historical part of this study explores sources written before 1650 about varnishes on bowed and plucked string instruments. As there are barely any precise descriptions of lute varnishes of the sixteenth century, documents of various origins such as inventories, invoices or letters are included. An attempt was made to draw conclusions about the composition and manufacturing of lute varnishes as well as to point out their historical significance and appreciation. Here, it became obvious that the characteristics of lute varnishes do not obey any requirements with regard to their musical function. Instead, they are composed with regard to their aesthetic effects and therefore comparable to varnishes used in paintings.

The scientific examination of the samples was carried out at the Stuttgart State Academy of Art and Design in cooperation with the Lab of the Musée de la Musique and the Museum d'histoire naturelle in Paris, the Bern University of the Arts, and the Swiss Institute for Art Research in Zürich. A complementary array of analytical tools (such as light microscopy, infrared spectroscopy, and gas and liquid-chromatography) was applied to determine the structure and the chemical composition of the coats and especially their organic components. The results provide new information on the materials that were used by the masters, with a detailed characterization of the stratigraphy of the coatings. These natural scientific findings are compared and extended with the historical information from the written source material.

Balthazar Soulier (Dipl. Rest.) is a conservator for stringed musical instruments based in Stuttgart and Paris. His interests focus on historical varnishes and on the development of conservation treatment and materials for the care of historical playing instruments. After studying the cello in France and Austria, Soulier was trained as a violin maker at the state violin making school of Mittenwald and worked for a number of years as restorer in renowned violin restoration workshops. In 2010, he graduated from

the Stuttgart State Academy of Art and Design (Germany) with a diploma in Conservation of Easel Paintings and Polychrome Wooden Sculptures (diploma thesis on historical lute varnishes). His research projects led him to work with several European institutions and to become an affiliated researcher of the Musée de la Musique in Paris.

**Charles Burney, the *Accademia Ercolanese*, and
the First Images of the Musical Instruments of Pompeii**
Roberto Melini
Conservatorio Bonporti, Trient

“No such instrument as this has been found before, either in ancient painting or sculpture....” Charles Burney, in his *An Eighteenth-Century Musical Tour in France and Italy*, thus records his astonishment, confronting in 1770 an enigmatic musical instrument—a sort of trumpet—recovered during the early excavations in Pompeii, the town buried by the eruption of Mt. Vesuvius in 79 A.D. Burney, a founder of modern musicology, was visiting the Museum Herculanense, created by Bourbon rulers to preserve valuable evidence emerging from the ash and lava beds. A few months earlier, Mozart had visited the ruins of Pompeii, feeling emotions that he later conveyed in *The Magic Flute*.

Burney documented these finds despite prohibitions (“As no person is suffered to use a pencil in the museum, Mr. Robertson, an ingenious young artist of the party, was so obliging as to make a drawing of it, from memory, in my tablets”), and in reporting on other musical instruments and iconography rescued from oblivion. Among the publications of the *Accademia Ercolanese*, founded in 1755 by Neapolitan sovereigns, are eight volumes of the *Antichità di Ercolano esposte*, depicting the syrinx, tibia, systrum, cymbala, tintinnabula, etc. The accurate graphical rendering of these objects and of iconographical evidence (paintings, mosaics, and statues) is an important achievement of the academy’s fine artists. Today these images, beside their aesthetical value, are crucial to our knowledge of ancient organology. Relating them to Burney’s report will cast new light on that extraordinary heritage. Some of these portrayals of musical instruments are entered in our collective imagination; others, even more precious, depict finds that have since been lost.

Roberto Melini, a lecturer in the archaeomusicology of antiquity at the University and at the Conservatoire of Trient, Italy, pursues research on the music and soundscapes of ancient civilisations, particularly that of Rome. He has published monographs (*Archeologia musicale*, Trient, 2007; *Suoni sotto la cenere. La musica nell’antica area vesuviana*, Pompeii, 2008) and has written essays for scholarly journals and archaeological exhibitions (in Pompeii, London, Florence, Brussels, St. Petersburg, Munich, Lugano, and Hong Kong).

**The Art of *tibiae*: A Music-Archaeological Case Study
of an Instrument from Late Antiquity**
Olga Sutkowska
Berlin University of the Arts

Tibiae is the Latin term for a reed aerophone made up of two pipes played simultaneously. During the Roman Imperial period, the *tibiae* achieved a highly elaborated organological construction. The level of technological development and the effort of producing the instrument can be compared to that of modern Western orchestral reed instruments, such as the oboe or clarinet.

In this paper, five different aspects concerning the art of *tibiae* will be discussed:

- (1) its music iconography (depictions of the instrument in a great variety of iconographic sources, such as paintings, mosaics, reliefs, etc., in which organological features and characteristic playing postures are shown with exceptional care in detail);
- (2) its instrumental iconography (elaborated ornamentations on the archaeological *tibiae* finds);
- (3) the instrument's construction as an artwork (a highly sophisticated organology of the *tibiae*, including a specific mechanism of rotating cylinders of silver and bronze, which enabled closing and opening the finger holes);
- (4) the art of playing the *tibiae* (professional instruments for virtuoso performers, specially designed for skilled playing);
- (5) the art of sound (additional acoustic devices in form of protruding side-tubes attached to the finger holes as well as a horn-shaped bell attached to one of the pipes; organological features aimed at producing a special sound of the instrument related to its socio-cultural context, the Dionysus/Bacchus cult).

A synthesis of the above mentioned aspects reveals different facets of the art of *tibiae*, which belonged to the realm of skilled instrument makers, virtuoso performers and specialized craftsmen working in the visual arts of Late Antiquity.

Olga Sutkowska is a PhD student at the musicological faculty of the Berlin University of the Arts (Germany). She is currently working on her dissertation about a specific type of the Roman double pipes (*tibiae*), in which she discusses the acoustic and mechanical systems of the instrument; the PhD project is funded by the DAAD (Deutscher Akademischer Austausch Dienst/German Academic Exchange Service).

**Instruments of a Medieval Court:
Images and Sound at the Court of the Dukes of Burgundy (1364-1477)
Martine Clouzot
University of Burgundy**

At the court of Burgundy, during the reign of the Dukes of Valois (1364-1477), connections between visual arts, musical instruments and practices were evident. Painters illuminated books for the ducal library with images of musicians playing instruments. At the same time, ducal courtly musicians, named *menestrels*, played similar instruments – trumpets, bombardes, bagpipes, chalemies, oboes and drums – for political events and court ceremonies, including “entrées solennelles,” banquets, balls, and tournaments. With the images and the instruments, these artists – instrument makers, menestrels and illuminators – worked for the same political power.

This paper will explore the relations between images, sound, and instruments in the princely illuminated books. What regard did the painters of courtly musical instruments and performances have for the pleasure and the power of the dukes? Have they painted these “high” instruments more and less realistically, and why? What is their conception of sound, music and political power in fifteenth-century courtly society?

Martine Clouzot is maîtresse de conférences of medieval history at the University of Burgundy and Directrice adjointe of the Unité Mixte de Recherche – CNRS ARTEHIS. In November 2011, she obtained her Habilitation à diriger des recherches (University of Paris 7) with the subject: “Music, Madness and Nature in Illuminated Manuscripts (13th-15th c.): the Iconography of the Musician Fool.”

She is the author of *Le Jongleur, Mémoire de l'Image. Figures, figurations et musicalité dans les manuscrits enluminés, 1200-1330* (Bern: Peter Lang, 2011) and *Images des musiciens (1350-1500). Typologies, figurations et pratiques sociales* (Turnhout: Brepols, 2008). She was co-commissaire of the exhibition *Moyen Âge entre ordre et désordre* in 2004 at the Instrumental Music Museum of Paris.

**The Green Harpsichord Revisited:
Arnold Dolmetsch, William Morris, and the Musical Arts and Crafts
Edmond Johnson
Occidental College**

Wandering through the crowded galleries of London’s 1896 Arts and Crafts Exhibition, one would have encountered a vast array of objects – from decorative panels in cast bronze to stained-glass windows and intricately-cut woodblock prints – in short, all the trappings of a society which was dedicated to advancing the cause of fine craftsmanship and “ignoring the artificial distinction between Fine and Decorative art.” But even in the company of this eclectic gathering, one piece would have stood out as

being particularly remarkable: a large single-manual harpsichord, newly constructed by Arnold Dolmetsch and decorated by a talented young artist named Helen Coombe. Measuring over eight feet in length, the harpsichord's exterior had been treated with nothing more than a coat of green lacquer. A glance inside the case, however, revealed a meticulously decorated soundboard embellished with ribbon-entwined bundles of colorful fritillaries, their variegated blooms illuminated with lustrous silver paint. Just below, on the sinuous strip of soundboard lying between the harpsichord's bridge and bentside, a continuous line of music had been carefully painted in the mensural notation of the late Renaissance. Long known as the "Green Harpsichord," this unique instrument was far from being a simple attempt at recreating an object from the musical past. Indeed, its innovative design and distinctive decoration betray a rich mixture of artistic influences that freely combined elements of the present and the past.

In this paper, I will use the Green Harpsichord as a starting point to investigate Arnold Dolmetsch's connection with the larger cultural scene of 1890s London – a milieu of artists and intellectuals that included some of the leading figures of the Arts and Crafts movement, including William Morris, Selwyn Image, and Herbert Horne. In addition, I will discuss the instrument's origins, exploring both its unusual features and analyzing its decorative details in light of the oft-claimed connection between the Green Harpsichord and William Morris.

Edmond Johnson is currently Adjunct Assistant Professor of Music History and Cultural Studies at Occidental College in Los Angeles, California. He recently received his PhD in musicology from the University of California, Santa Barbara, with a dissertation entitled "Revival and Antiquation: Modernism's Musical Pasts." He has written several entries for the forthcoming second edition of the *Grove Dictionary of American Music*, including those for "Theremin," "Player Piano," and "Mechanical Instrument."

The Clavichords of Victor Hammer (1882–1967)

Gregory Crowell

Grand Valley State University

In 1929, the Austrian painter, printer, and type-set designer Victor Hammer (1882–1967) built his Opus 1 clavichord in Florence, Italy. This instrument is a copy of the clavichord from ca. 1800 by J. Lusser, now in the German National Museum in Nuremberg. Hammer's clavichord is a milestone in many ways. It is an early copy of a rare survival of nineteenth-century Austrian clavichord building. Furthermore, it and Hammer's other surviving clavichord arguably represent the only instruments built in historical style between the cessation of Arnold Dolmetsch's work with the Gaveau firm in 1914 and the opening of the Skowronek and Hubbard and Dowd workshops in the 1950s. Hammer's intention was to produce a number of such clavichords, a plan that, had

it not been interrupted by World War II, would surely have changed the direction of the revival of the clavichord in the second half of the twentieth century. This lecture will recount the story of the creation, loss, and recovery of Hammer's clavichords. It will document Hammer's musical associations as they pertain to his clavichord building, including such figures as Albert Schweitzer, Ralph Kirkpatrick, Bernard Berenson, and Heinrich Schenker. Hammer's self-portrait with a clavichord (and other musical instruments) will be examined for the documentary evidence it provides about his work as an instrument builder.

Gregory Crowell is university organist and affiliate professor of music general education at Grand Valley State University, and director of music of St. Mark's Episcopal Church in Grand Rapids. He has appeared as organist, harpsichordist, clavichordist, lecturer, and conductor throughout North America, Europe, Canada, and Japan. He has performed in many festivals and conventions, most recently at the International Clavichord Symposium in Magnano, Italy.

The former director of publications for the Organ Historical Society, Crowell now serves as editor of *Clavichord International*, the only journal dedicated exclusively to the clavichord. He has published widely on topics related to historical keyboards and keyboard music.

The Washington Panormo: a *dolce flauto dolce*?
Inês de Avena Braga
Leiden University/Orpheus Institute

Italian baroque recorders are not a topic exhausted either in writing or in performance. Until now, little research has been carried out into the building techniques they display and the influence these may have had in music composed for them. The great amount of music written specifically for recorder in late seventeenth- and early eighteenth-century Italy calls attention to the instruments available to Italian recorder players of the time.

In the specific case of baroque recorder music from Naples, the circumstances are unique: for such a wealth of music, only one Neapolitan recorder survives, a stunning ivory alto by Ioannes Panormo now kept in Washington. This instrument will be the focus of this paper, which describes the research undertaken in measuring it, and presents comparative analyses with other baroque models, revealing interesting information on the Panormo construction and its sounding qualities. This will be aided by audio and video recordings with a recent copy of the instrument reconstructed from this research.

The Panormo alto displays the work of an exceptionally skilled luthier, and one can only imagine what expert hands had the pleasure of performing with it and what music it produced. This important instrument had never been copied or reproduced in modern times; an important step is thus being taken with this research into its constructional and

sounding characteristics, its actual reconstruction, and further use in performance; it may help stimulate research and exploration of Baroque Neapolitan music, and also raise awareness of the specificity of baroque instrument construction and its influence in performance.

Inês de Avena Braga is a recorder player and researcher, specializing in Neapolitan baroque music. Born in Brazil, Inês moved to Europe in 2001 and has performed in chamber and orchestral formations throughout The Netherlands, France, Austria, Italy, Belgium, Germany, Spain, Iceland and Brazil, with such ensembles as the Amsterdam Baroque Orchestra. In 2010, Inês won the *II International Competition Prince Francesco Maria Ruspoli*. Last year, her duo *LOTUS* with Claudio Ribeiro won the second prize at the prestigious *Premio Bonporti*.

Inês writes for *Early Music America* and is currently a docARTES PhD student at the Leiden University/Orpheus Institute.

Fumitaka Saito moved to Europe in 1980, and studied with M. Piguet at the Schola Cantorum Basiliensis. After copying an original Stanesby Jr. recorder that Piguet owned, Saito started building recorders himself. He then moved to Amsterdam in 1987 to study with W. van Hauwe. Since graduating in 1992 he has worked extensively as a recorder maker and has given concerts in Europe and in his native Japan.

The Anciuti Enigma
Cecil Adkins
University of North Texas

Unmarked and undated oboes are particularly difficult to place within a specific maker's oeuvre. An expert eye can often attribute a particular instrument to a maker and, if there are a sufficient number of specimens, even assign them to specific time periods. Such is the case with the instruments of the English Milhouse family, whose several dozen oboes can be grouped into stylistic categories according to their design features. On the other hand, the oboes of the Richters family from the early eighteenth century are stylistically so similar that it is not possible to propose any dates of manufacture.

In the case of the Italian maker Giovanni Maria Anciuti (1674-1744), whose many works were stamped with his name, only a few had dates, which proved an insufficient number to group the instruments. Of particular interest, however, is the ivory straight-top oboe, a lovely confection that is part of the now stored collection of the Victoria and Albert Museum in London (cat. no. 1127-1869), and which is said to have belonged at one time to Rossini. This oboe has been the focus of assertions that would establish the origins of the straight-top oboe as early as 1710 (stamped on the earliest dated Anciuti instrument), or as late as 1740 (the latest of his marked instruments). The age of this oboe is important, not only because it would establish the beginnings of the straight-top family, but it would also allow more correct attributions regarding the genre's place of origin.

This paper will propose a rationale by which some of the problems may be clarified, and it will also offer some recently discovered information concerning the obscure life of this famous craftsman.

Cecil Adkins, well known as a musicologist and bibliographer, was appointed Regents Professor in 1985 at the University North Texas where he taught and directed early music activities for thirty-seven years. His many publications on instruments include significant studies of the monochord, trumpet marine, positive organ, and the eighteenth-century oboe. In 1992 he was awarded the Frances Densmore prize for his article on the oboes of the Richters family, and in 1999 was selected as the recipient of the Curt Sachs Award by the American Musical Instrument Society. In 2006 he was awarded the Paul Riedo Legacy Award by the Dallas Bach Society for his outstanding contributions to the performance of early music. He is a past president of AMIS.

125 Years of Piano Silk Work in London

Marie Kent

London Metropolitan University

On 28 April 1785, Edward Johnson feloniously stole “fifty-nine yards and a half of green silk, called Persian” from the Holborn workshop of his employer, John Geib, a contractor of Longman & Broderip of Cheapside and a maker of square pianos. The silk was worth 50 shillings, Johnson sold it for seven, and his sentence was seven years’ transportation. So reads the transcript of his trial at The Old Bailey, where Geib’s testimony that he used the silk “in the inside of my instruments, for my Piano fortes” is the earliest known reference to piano silk work in the history of London piano making. The application of plain or pleated silk behind fretted panels in pianos, as a practical and decorative feature, was a characteristic of London piano making that endured for approximately 125 years, being first introduced in the late eighteenth century and reaching its fashionable peak in the mid-Victorian era. The history of its use, the careers of the men and women who perfected its application, and its eventual disuse are explored through the Broadwood company archives, the Post Office London Directories, *The London Gazette*, later criminal trials detailing the curious particulars of its manufacture, supply and intermittent theft, and surviving silk panels in extant instruments.

Marie Kent is a research student at the Sir John Cass Faculty of Art, Media & Design, London Metropolitan University, studying the piano industry workforce in London from the origins of the trade to the end of the nineteenth century. She joined the university in 2004, graduated as a piano technician in 2007, and completed her MA on the subject of women and the manufacture of the piano in 2009. She is a member of the Piano Tuners’ Association and has worked part-time as a piano technician at the Guildhall School of Music & Drama, the Royal College of Music, and at a private workshop in Chislehurst, Kent.

Consolidation: The Piano Industry in Britain during World War II

Sarah Deters Richardson

University of Edinburgh

In the January 1941 issue of *The Music Trade Review* it was reported that “word has come from England that the government proposes to limit the production of musical instruments during the next six months to an output which could be produced by one single factory.” Did this government proposition come to fruition? If so, what were the effects of consolidating the musical instrument industry, specifically British piano manufacturers, during World War II?

This paper will use the war-time restrictions placed on the production and distribution of British pianos as a case study for the entire musical instrument manufacturing industry in Britain during World War II. The archives of various piano manufacturers will help to elucidate the measures taken by the piano industry in order to meet growing government restrictions and the push to convert to war production. The paper will explore how the pressures of WWII impacted the production and design of the piano and whether these changes had lasting effects on the state of music and musical-instruments manufacturing in the United Kingdom.

Sarah Deters Richardson is a doctoral student in organology at the University of Edinburgh where she is studying the impact of World War II on the musical instrument manufacturing industry of the United Kingdom. She holds a master of music in the history of musical instruments from The University of South Dakota. Prior to beginning her doctoral studies, Richardson was a curator of musical instruments at the National Music Museum, Vermillion.

The Banjar Pictured: Considering the Depiction of the African-American Early Gourd Banjo in *The Old Plantation*

Shlomo Pestcoe

Brooklyn, New York

The Old Plantation (South Carolina, ca. 1785–90; Abbey Aldrich Rockefeller Folk Art Museum, Colonial Williamsburg Foundation, 35.301.3) is the oldest known portrayal of African-American music and dance in North America. It is also the earliest known depiction on this continent of the five-string banjo’s predecessor – the *early gourd banjo*, a distinctly Afro-Creole gourd-bodied plucked spike lute first documented in the circum-Caribbean in the seventeenth century. This image is especially significant as it is one of only two known period illustrations that details the early gourd banjo’s unique four-string configuration: three long equidistant strings with a fourth short ‘thumb string’ at top. In 2010, CWF’s Susan P. Shames may have solved the seventy-five year old mystery of *The*

Old Plantation's obscured provenance. However, the challenge still remains of interpreting the scene depicted.

Taking up that challenge, I look at the early gourd banjo and its place in the development of early African-American music/dance and material cultures by drawing on the latest organological and ethnomusicological findings of banjo roots research. Using cross-cultural comparisons between the historical record and more recent documentation of West African living traditions, I examine the similarities and differences between the early gourd banjo and its African forebears and extant relatives, a family of some 67 culturally distinct plucked spike lutes still found throughout West Africa. Similarly, I consider the other instruments shown: the round object used as a drum and (possibly) two West African-style gourd vessel rattles, akin to the Mende *segbureh* (also *shegureh*; Sierra Leone) and the Vai *sasaa* (Liberia). I further contextualize the image by looking at the depicted performance context, dancing, dress, and objects.

Finally, I compare *The Old Plantation* to other examples of early banjo iconography predating 1840, the year when the first images appeared of the wood-rimmed five-string banjo, as well as to the only known historic early gourd banjos: the Stedman *Creole Bania* (Suriname, ca.1773–77) and the Schoelcher *Banza* (Haiti, ca.1840–41).

Shlomo Pestcoe is a musician and an independent researcher in the field of ethno-organology. His main focus is the origins, history, and organology of the lute family of string instruments the world over. While interested in all types of African chordophones, Shlomo's particular expertise is in the traditional lute family instruments found all over the continent, especially those of West and North Africa. Shlomo is recognized as one of today's leading scholars in the burgeoning fields of banjo studies and banjo roots research, the empirical study of the banjo's early history, its African American/Afro-Creole origins, and its West African heritage.

Dating the Trieberts' Work by Application of High-Magnification Color Photography

Robert Howe

University of Connecticut, Storrs

The Trieberts were the dominant oboe and bassoon makers of nineteenth-century France. The firm was established in 1810 by Guillaume Triebert and later taken over by his son Frédéric. Upon the latter's death the firm was bought by Felix Paris and subsequently taken over by first Gautrot and then Couesnon. Couesnon used the Triebert name until at least the mid-1950s; thus instruments marked "Triebert" cover a span of 145 years.

In 1982 and 1992, Young and Da Silva established dating schemes for Triebert instruments. Although Young's scheme is generally accepted, a recent study of Frédéric Triebert's 1862 catalogue identified flaws in these schemes. I studied Triebert trademarks

with high-magnification color photography, which permits the evaluation of fine detail at two to four times life size. Data obtained were interpreted in light of contemporary documents, novel observations of the lettering, and period evidence.

The resulting dating scheme, more precise than previous methods, also corrects several errors. Reliable differentiation of instruments made by Guillaume Triebert, Frédéric Triebert, and Gautrot/Couesnon is achieved. Dating of instruments is now possible within a 20-year period for most of the production years, and even more precise in the nineteenth century.

The technique of high-magnification photography will be reviewed.

Robert Howe, a father and practicing physician, studies musicology at the University of Connecticut. He has published in *JAMIS*, the *Galpin Society Journal*, *Larigot*, the *Double Reed*, *National Review*, the *New England Journal of Medicine*, and twelve other journals. He has received grants from the Galpin Society, AMIS, and Selmer et Cie, and was awarded the 2006 Densmore Prize for his paper on the Boehm oboe. He plans to retire from medicine soon, to continue his research on the nineteenth-century oboe from Hawaii.

Maldura, Besson, and their Contra Bass Clarinets

Albert R. Rice

Claremont, California

Beginning in the early nineteenth century, interest in the development of a contra bass clarinet appears in the inventions and patents of several European makers. The impetus for the development of these large and expensive instruments was the need for a playable, loud contra bass woodwind in wind bands and orchestras throughout Europe and America. By the late nineteenth century, two large manufacturers began to produce these instruments: Maldura in Milan with their contra alto clarinet in E-flat in 1881, and Besson in Paris and London with their contra bass clarinet in B-flat in 1890.

This presentation discusses the design, construction, dissemination and use of the earliest successful contra bass clarinets, both represented in the Metropolitan Museum of Art: Maldura's E-flat contra alto clarinet and Besson's B-flat contra bass clarinet. The Maldura contra alto clarinet will be compared to Maldura's 1866 bass clarinet patent, bass clarinets by Maldura, and a later contra alto clarinet by Evette & Schaeffer. The five extant Besson contra bass clarinets will be compared with each other and an order of manufacture will be suggested.

Orchestras and bands in which Besson contra bass clarinets were used are identified. Vincent d'Indy was the earliest composer to write for the contra bass clarinet, in his opera *Fervaal* (1897); prominent passages for the contra bass clarinet are discussed. During the early twentieth century, manufacturers produced their own versions of the contra alto and contra bass clarinets that are still used today.

Albert R. Rice is a librarian for the Los Angeles Public Library, a professional appraiser of musical instruments, formerly the curator of the Kenneth G. Fiske Musical Instrument Museum of The Claremont Colleges, and president of AMIS. He received the 2011 Nicholas Bessaraboff Prize from AMIS for his book, *From the Clarinet d'Amour to the Contra Bass: A History of Large Size Clarinets, 1740-1860* (Oxford University Press, 2009).

**Italian Musical Instrument Patents:
A Complete Survey with Special Focus on Wind Instruments
Francesco Carreras
Pisa, Italy**

The Italian national patent office was founded in 1861, after the re-unification of the country.

The number of patents presented increased steadily over the years, including those related to musical instruments. A complete examination of the over 1300 patents on musical instruments, dating from 1861 to 1940, was performed over the past few years. Special attention was devoted to the patents dealing with wind instruments. The most interesting findings will be highlighted, along with statistics and data concerning other categories of musical instruments.

Francesco Carreras focuses his research interests on the history and technology of Italian wind instruments, namely from the beginning of the eighteenth century until the first half of the last century. He is author of several publications in this field and contributions to specialised conferences. He is a collector of historical woodwinds with special attention to Italian flutes.

**Tuning Tablas: Managing Materials and Pleasing Players
Allen Roda
New York University**

Tablas (India's most famous drums) are used in many musical genres and are increasingly common internationally. While much has been written about the artistry of tabla performance, the musicality of making tablas is rarely mentioned. My dissertation focuses on the construction of tablas from the manufacture of various material components to the fine-tuning of the final products. In this paper, I will focus on the delicate process of tuning tablas. Fine-tuning tablas often takes hours – invariably in the customer's presence. Beyond adding and removing tiny layers of strategically placed *syahi* (iron tuning paste), it often involves intense discussions between makers and players regarding sonic qualities and capacities. These off-stage performances play an important role in determining the sonic character of on-stage performances that follow.

The effects of makers' diagnostic listening practices and dexterous manual gestures are audible in the sounds tablas make. After discussing the physics of tablas, their structure, and the way in which different materials contribute to the sonic capacity of each instrument, I will address the various techniques makers use for fine-tuning. While high-quality instruments must be resonant, free from any buzzing, and harmonically balanced, the exact needs of each player vary according to their playing style, and sense of aesthetics – that is to say their hands and ears. Tabla makers alter their production techniques in order to compensate for the various needs of their customers, a process which highlights their musicality and intuitive understanding of the sonic properties of the instrument and its constituent materials.

Allen Roda is a PhD candidate in Ethnomusicology at New York University. He has recently returned from two years in India studying tabla construction and design as well as Hindi and Urdu. He is interested in the application of ethnographic methodologies and anthropological studies of material culture to the study of musical instruments, with particular focus on the contribution of instruments to musical production.

Tradition and Change in the “Traditional” Chinese Orchestra
Cheng Liu
Wake Forest University

In the early 1950s, a desire to perpetuate traditional music and instruments began to manifest itself in China. An important aspect of this movement is the development of large-scale instrumental ensembles of traditional instruments. Though based on the traditional, small *Jiangnan sizhu* ensembles, modern Chinese orchestras often comprise forty to sixty performers, consisting primarily of traditional Chinese instruments, but incorporating some Western instruments, such as the cello, double bass, and harp, as well. Some of the Chinese instruments – notably the erhu and pipa – are present in large numbers, organized in “sections,” as in the Western symphony orchestra. The ensemble is led by a conductor, and the players read from a type of notation that is unique to the traditional Chinese orchestra, but modeled on Western principles. The repertoire of these ensembles typically consists of arrangements of traditional Chinese melodies and music written for western orchestras, though some orchestras commission new works.

My paper demonstrates how the popularity of the Chinese orchestra has prompted changes in instrument construction, particularly in the development of complete families of bowed and plucked string instruments. It further reveals how instrument builders have responded to the growth of these ensembles by experimenting with instrument design, some merely by adapting and improving traditional techniques, others through the use of acoustical principles.

My study places the Chinese orchestra within its cultural context, tracing both the native and Western influences that have shaped its development. Beginning with

experiments in Shanghai in the 1920s and '30s and Nanjing in the late 1930s, it identifies the foundation of two enduring ensembles in Beijing and Shanghai in the 1950s, and continues through the difficult years of the Cultural Revolution (1966-76) to the rapid multiplication of these ensembles in the 1990s and later. Today there are at least five professional orchestras of this type in China, two in Taiwan, one in Hong Kong and one in Singapore. There are student orchestras in conservatories, universities, and public schools throughout China, as well as amateur orchestras in Chinese immigrant communities abroad.

Cheng Liu is from Hangzhou, China. He is pursuing a double major in music (piano performance) and finance at Wake Forest University. Cheng currently studies piano with Dr. Peter Kairoff and has studied previously (?) with Dr. Louis Goldstein. He has also studied conducting with Dr. David Hagy. In the summer of 2011, Cheng won a Richter Scholarship from Wake Forest and collaborated on a research project with Dr. Stewart Carter on “The History and Current Development of Chinese Orchestra.”

**In-Depth Study of Baroque Bassoons' Temperament
Comparing Originals and Reproductions by Maker, Time Period, and Region
Bryant Hichwa, Sonoma State University
David Rachor, University of Northern Iowa**

The authors developed a physical acoustical modeling procedure to characterize baroque bassoons. In previous work, the researchers developed techniques to precisely determine the physical size of all aspects of the bassoons. From these data they mathematically deduced (1) natural pitch, (2) playing pitch, (3) equivalent volume of the reed, and (4) acoustic length corrections.

In the current work, the researchers expanded their initial study to include 44 original bassoons and 14 reproductions. Original makers include Scherer, Poerschmann, Eichentopf, Prudent, Grenser and Porthaux. In five cases, multiple bassoons by the same maker were compared. The researchers' analysis demonstrates major measurable differences between period and contemporary bassoon makers.

Unique to woodwinds, dimensional measurements determine pitch, which allows an exhaustive study of temperaments. The researchers considered 47 temperaments in a blind mathematical modeling procedure. The sensitivity to specific temperaments was enhanced with the inclusion of accidentals: E-flat and B-flat. They chose German, French, English, and Italian temperaments originating in the eighteenth and early nineteenth centuries. For each bassoon, results indicate a grouping of five to seven preferred temperaments, typically mean-tone. The pitch difference by note for every temperament is evaluated for each bassoon. The preferred temperaments exhibit a correlation between the country of origin and the bassoon maker.

The model indicates that there were a number of excellent bassoon makers in the eighteenth century. It is also predictive and shows where improvements can be made. In about 25 percent of the bassoons, minor changes to the wing joint can result in a significantly improved “designer” bassoon. The model also illustrates the evolution of these bassoons with time, which led to major changes in bassoon construction in the mid-nineteenth century.

Bryant Hichwa is professor emeritus of physics and astronomy at Sonoma State University. He has a research interest in the musical acoustics of historical instruments, especially double reed woodwinds. He teaches courses in the Physics of Musical Instruments. He has appeared on National Public Radio’s Science Friday discussing “the physics of musical instruments”.

David Rachor is professor of music at the University of Northern Iowa and the author of articles on bassoons and reed making in the *Galpin Society Journal*. He is also a frequent performer on both modern and historical bassoons.

The C-Melody Saxophone: An Acoustical Comparison **Andrew Jackson**

Many saxophonists are well acquainted with the C-melody saxophone and perceive it as a child of the roaring ‘20s. I will examine the veracity of this. Why and how the instrument sold in such large numbers can only be explained by examining Conn’s marketing research and dubious advertising; America’s strong economic revival as the 1920s progressed; the new development of popular songs and easy availability of sheet music; changes in banking and consumer buying habits; and the enormous expansion of the American piano market that took place between 1890 and 1910.

Why the C-melody saxophone faded into obsolescence can be explained by Conn’s late 1920s school band movement marketing strategy; the emergence of the radio and less expensive, mass-produced disks and phonographs; the rise in entertainment spending with a corresponding focus on entertainment outside the home; and the shift of the public’s perspective of its partner - the piano.

The genesis of the C-melody can be traced back to the Adolphe Sax Tenor saxophone in C. Following this design were English and French models. The American version was realized by C. G. Conn in 1901 via the eminent saxophone virtuoso Edward Lefebre who may have acquired an Adolphe Sax instrument in Paris during the Gilmore Band European tour of 1878. Edward Lefebre was associated with C. G. Conn from the early 1890s to 1905.

The sound of the C saxophone is considered unique in comparison to the other saxophone voices. However, tone quality is subjective and by its nature difficult if not impossible to quantify. An examination of the bore profile and tone holes may help to uncover what design objectives Adolphe Sax and C. G. Conn may have had. This can be

further clarified by an examination of this data on the E-flat and B-flat instruments. In the interest of simplicity I will limit my analysis only to the early designs of Adolphe Sax, C. G. Conn and a few others.

Andrew Jackson is an independent, self-funded scholar. He lives in the rain forest village of Brus Laguna, Honduras, Central America with his wife, a Mayan Indian. He owns and captains the Caribbean ship *La Tikka*. He has earned bachelor's as well as master's degrees and is writing a book about the saxophone. He is a member of The Galpin Society and The North American Saxophone Congress and has completed speaking engagements at a number of universities and conservatories both in the US and abroad. His work has been reviewed in *The Saxophone Symposium* and *The Saxophone Journal*. He is the featured lecturer at The North American Saxophone Alliance Biennial Conference 2012 and at the World Saxophone Congress XVI in St. Andrews, Scotland.

The Erat Harp Manufactory: Decorative Practices and Trends 1821–6

Mike Baldwin

London Metropolitan University

Through detailed examination of documents pertaining to the Erat harp manufactory in London (1799–1858), chiefly those from the period 1821–6, this paper reassesses the richness of decoration and diversity of colour schemes of the late Georgian harp

Despite the survival of many instruments, little attention has been given hitherto to the decorative finishes and schemes of these harps. The main decorative phases, directly influenced by archaeological discovery, are well documented, and model names, such as Grecian and Gothic, derive from historical periods. Decorative moldings become standardised from the late 1790s, and it appears that a common manufacturer of gesso moldings served several makers. Analysis of extant decorative molds surviving the Erard Company reveals designs used by competitors, including Erat.

Newly discovered documents provide information about the tools, materials and artists of the Erat manufactory, from which it is possible to trace trends in soundboard decoration and paint finish. Through a survey of surviving Erat harps, subtle developments in decorative molding are noted, and a decorative chronology is proposed. Whilst trends in decorative molding changed relatively slowly, color schemes appear to have been less predictable and more volatile. Accounts detail the purchase of paints, varnishes, gilding and finishing materials, revealing supply chains and illuminating decorative tastes during the closing years of the Georgian era. This wide range of paint finishes identified is not fully represented among surviving Erat harps.

Mike Baldwin is a second year, part-time research student in the Sir John Cass Faculty of Art, Media & Design at London Metropolitan University. Researching innovation, business and design in 19th-century London harp manufacturers, in particular Erard and Erat, Mike has been making and restoring harps and researching harp

development for over twenty years. Mike lives in London and teaches Design & Technology to high-school students with learning disabilities.

Golden Shamrocks and Winged Maidens: the Harps of John Egan
Nancy Hurrell
Braintree, Massachusetts

John Egan was Ireland's leading harp maker in the early nineteenth century. Egan harps are sumptuously decorated with the popular Greek themes of the day, as well as with Irish emblems; including the harp maker's signature of golden shamrocks. In Ireland, harps were played for over a thousand years for chiefs, kings, and the aristocracy. However in the early 1800s musical styles changed, and only a few players of the Irish harp remained. At this pivotal moment, John Egan, a smith and self-taught harp maker, ingeniously invented new models of harps and mechanisms that enabled the Irish harp tradition to continue. Egan created and produced a "Portable Irish Harp," a small green harp covered in golden shamrocks. This was the first 'Celtic' harp, copied by succeeding generations of harp makers. Egan's Portable Irish Harp, No. 1, in the collection of The Metropolitan Museum of Art, has been examined by the author, and will be discussed in this paper.

Egan made harps in various shapes, sizes and colors, incorporating a range of mechanisms: ring stops, ditals (?), and pedals to accommodate chromaticism . The author has examined Egan harps in museums and private castles in Ireland, as well as collections in Britain and the U.S. In the presentation, the harps are shown as works of art, with examples of splendid gilt ornamentation. The paper explores Egan's motivation for his harp designs and symbolic decoration within an historical context. In this politically charged era, Egan cleverly managed to use Irish nationalist themes while also being "harp maker to the king" (George IV). With his sculpted winged maiden harp, he fused a Romantic icon for political independence into a playable harp. Portrait painter Sir Thomas Lawrence and fellow artists captured images of the famous players of Egan harps in artworks, including Thomas Moore, Sydney Owenson, and Lady Elizabeth Conyngham. The lecture concludes with a short performance of period music on the author's own rare Egan Portable Irish Harp (c.1818).

Nancy Hurrell, harpist, performs in solo concerts and with early music ensembles. She has published several articles on Egan harps and lectured at the Royal Irish Academy in Dublin (2008) and at the 'First International Conference on Irish Music', Durham University in England (2010), and was interviewed by *The New York Times* for an article on the infamous 'dumpster Egan'. In Boston, Nancy is a consultant to the Museum of Fine Arts Musical Instrument Collection, and she teaches at The Boston Conservatory. Nancy's latest CD, *The Egan Irish Harp*, is recorded on two historical Egan harps from the 1820s.

**Tables at Play: The Significance of the Table in Sixteenth- and
Seventeenth-Century Music-Making and its Implications for Lute Players**
Christopher Morrongiello
Hofstra University

Among the many historically informed ways of holding a lute, that of using a table to support the instrument is perhaps the least known today. Yet in the sixteenth and seventeenth centuries, leaning the lute against the edge of a table, or resting it atop its surface, was a widespread if not common practice. This paper examines the iconographical representations of lutenists using a table or other resonant surface while playing (examples in the Metropolitan Museum include Caravaggio's *The Lute Player*, Laurent de la Hire's *Allegory of Music*, and Frans Hals's *Boy with a Lute*). It also considers the sources and social function of lute music printed or hand-copied in table-book format, the written instructions of lute pedagogues who advocated playing with the support of a table (such as Thomas Robinson, Thomas Mace, Marin Mersenne, and Ernst Gottlieb Baron), and the extant tables of the period that were intended for actual music-making (the Aeglentyne Table, for instance). Instruments showing evidence of having been constructed or modified for table-playing will also be considered: several surviving lutes have narrow protective strips of wood or ivory added along just their treble edge – the side that would have rested against the table (the lute by Sixtus Rauchwolff in the Met, for instance). Finally, the speaker will offer observations on some of the practical benefits of playing the lute in this manner (increased volume, warmer tone, better posture, more appealing visual aesthetics, and so forth). To complement this presentation the speaker will perform several musical works with his gut-strung lute resting upon a wooden table.

Christopher Morrongiello, a former British Marshall Scholar, is a graduate of the Mannes College of Music, the Royal College of Music, and the University of Oxford, where he earned a PhD in musicology. Morrongiello is a recipient of the first Marco Fodella Foundation scholarship for studies and research in Milan, Italy, and the first Patrick O'Brien Lute Society of America Lectureship. He is a professor in music history at Hofstra University and teaches lute and related historical plucked instruments in his private studio in Long Island, New York.

British Harp-lutes and the Influence of Neoclassicism
Hayato Sugimoto
University of Edinburgh

British harp-lutes are instruments of simple construction and inexpensive materials, yet they are highly decorated and show the influence of nineteenth-century Neoclassicism (or Hellenism). The term "Harp-lutes" (in this paper) refers to guitars, developed

primarily by the English composer and inventor Edward Light around the end of the eighteenth century, that were made in seven different designs combining lute, lyre, and harp structures. Light's designs were later further developed by Angelo Benedetto Ventura.

Compared with the contemporaneous Spanish guitar or its predecessor, the English guittar, the shapes and decorations of the British harp-lutes are more elegant, impressive and complex. In contrast with the concepts of purity and simplicity dominating Neoclassical art, the British harp-lutes seem excessively decorated, as if retaining a Rococo style such as is seen in the British tradition of gilt works and soundboard paintings, techniques that were commonly used in earlier periods. On the other hand, another type of harp-lute, Levien's 'Harp-guitar', patented in France, was constructed with exquisite workmanship and much less ornamentation.

Why were British harp-lutes constructed with such great emphasis on visual aspects? This paper will highlight their shapes and decoration in relation to contemporary fashionable art, and elucidate the importance of an attractive appearance that would have been appealing to fashionable society. Moreover, the paper will analyze the influence of Neoclassicism on social and cultural aspects of the musical instrument business in the early nineteenth century, and will investigate iconographical images of instruments as commercial products. The conclusions partly fill the gap between the English guittar and the Spanish guitar in the study of British guitar history.

Hayato Sugimoto was trained as a guitar maker in England between 2000 and 2005. During his apprenticeship he became interested in the historical, technological, and socio-cultural aspects of guitars and similar plucked instruments. In 2009 he completed a MMus in Musical Instrument Research at the University of Edinburgh with a focus on nineteenth-century French guitars. He is currently a PhD candidate in organology at the University of Edinburgh, researching the invention and development of the "harp-lute" family in Britain during the first half of the nineteenth century.

**Music Instruments at the
Museo de Arte Hispanoamericano Isaac Fernández Blanco:
From Old-fashioned Nineteenth Century to Modern Exhibit Design
Jorge Cometti, Museo Fernandez Blanco
Leila Makarius**

The Museo de Arte Hispanoamericano in Buenos Aires, Argentina, houses thousands of objects donated, early in the twentieth century, by Isaac Fernández Blanco. Over the last ninety years many other pieces have been bought or donated to this core collection, making it one of Argentina's most important collections. Among the many treasures in the museum are the musical instruments representing classical European traditions and

those of indigenous peoples. The instruments are displayed as both decorative and musical objects.

Currently the Museo de Arte Hispanoamericano Isaac Fernández Blanco's (MIFB) instruments are in the process of being restored – mostly those that may be resurrected to sound life – to help define the institutional “exhibition design agenda” for new special exhibition rooms. The aim of the design is to enhance the visitor's understanding and enjoyment of the instrument's beauty of form, manufacture, history and sound.

Over the last decade the museum has presented over a thousand concerts, formed a baroque ensemble, Capilla del Sol, carried out specialized research, issued publications, heightened awareness of American baroque repertoires, and acted as a musical ambassador throughout the Americas and Europe. Through these efforts the museum has gained public attention and has identified so well with the community that it now receives more donations. New instrument collections are being incorporated and the museum administration is rethinking details for their exhibition. A new team of curators, musicologists, historians, designers, etc., are working on the best alternatives for the exhibition of this new and rich cultural patrimony.

This presentation explores the many questions that arise while redesigning our museum and examples from other Argentinian collections such as The Museo de Instrumentos Musicales Emilio Azzarini, the collection of the National Institute of Museology, and the Raitman-Tubert family will help contextualize and augment the discussion. The presenters hope to open a dialogue with CIMCM members, and encourage them to share their ideas and help enrich the ones already on the table.

Lic. Jorge Luis Cometti has been the director of the Museo de Arte Hispanoamericano I. F. Blanco since 2000. Trained as a psychologist who specialized in education and institutions at the National University Buenos Aires, he has worked in the cultural management industry in Buenos Aires for the last twenty-five years. Mainly working with museums and musical productions within Argentina and abroad, he has helped organize around eighty fairs, edited books and catalogs, and co-curated many photography exhibitions, such as those of Robert Frank and Josef Sudek. He has organized more than a thousand concerts and is co-creator of Capilla del Sol.

Leila Makarius is a musicologist and photographer who has worked as a researcher in musicology and as a music teacher for children. Since 1996 she has organized the more than a thousand concerts at the Museo de Arte Hispanoamericano I. F. Blanc and has worked with Jorge Cometti in the restoration efforts of the instrument collection of the museum. As curator, she organized photo exhibitions of the most important Latin-American photographers, as well as Robert Frank and Josef Sudek. Leila is the co-creator of Capilla del Sol, a baroque music ensemble and organizer of master classes for young musicians.

The Kraus Archive: Voyage and Research, Rediscovery and Return **Caterina Guiducci**

In the years of “Firenze Capitale,” when the antique collectors Bardini and Stibbert were active, the Florentine collectors Alexander (1820-1904) and Alessandro Kraus (1853-1931) acquired more than 1,100 musical instruments from numerous countries and ages that provided a platform to write a comparative history of music and musical instruments. They displayed their collection on the occasion of several national and international exhibitions and in 1982 Kraus offered about 1,100 exemplars to the city-state of Florence, but the failure of this effort resulted in the collection’s dispersal among the most important European and American museums and collections. The most valuable part of the collection was sold in 1908 to Wilhelm Heyer in Cologne and in 1996 a few instruments returned to Florence, donated by the granddaughter of Alessandro Kraus, Mirella Kraus. These instruments are now displayed in the Kraus Room at the Galleria dell’Accademia Museum of Florence.

We may potentially reconstruct, at least partially, the collection’s history thanks to the Kraus archive. It is a precious source of information. Kraus’s letters reveal how the collection was acquired, studied, exhibited and subsequently sold or donated. In spite of family relocations, the archive survived in Vancouver, intact and unknown through the years until 2008, when it was generously donated to the Florence State Archive by Mirella Kraus. It contains many drafts of publications, work notes, periodical articles, music manuscripts and printed musical sources, a few photographs and sketches, a rich collection of catalogues, many by instrument manufacturers, and correspondence between the two musicologists and their colleagues and friends such as Gustave Chouquet, Mary Elizabeth Brown, Victor Charles Mahillon, Alfred James Hipkins, etc.

Alexander and Alessandro, each in a different way, seem to represent the main features of the Western cultural landscape of the nineteenth century: Alexander was mainly a romanticist, pianist, composer, teacher, and musicologist; Alessandro reveals a positivist approach that embraces musicology, organology, ethnomusicology, the evolution of the copyright law, and much more.

Further to her piano studies **Caterina Guiducci** graduated in Florence (Lettere e Filosofia). Afterwards, she studied and worked as an archivist and librarian at several Institutions, currently at the University of Florence. All the while her interests increasingly focused on archival and musicological research and she was awarded a PhD in History of Performing Arts (CV: Musicology) in Florence. Her studies document the recovery of the Kraus archive and musical instruments collection. They focus on the connections between the two Krauses and their international colleagues (Charles Mahillon, Alfred J. Hipkins, Mary Elizabeth Brown, etc.).

**Musical Instruments in the Collection of the Glinka National Museum
Consortium of Musical Culture: Between Function and Sense
Tatiana Ginzburg
Glinka National Museum Consortium of Musical Culture**

The presentation focuses on the primary functions of instruments and the embodied content of items in the collections of the Glinka National Museum Consortium of Musical Culture. Each instrument exhibited at the Museum has a number of inherent properties specific to the museum context. At its creation an instrument is given specific functions which in the course of its history may be retained or new ones may be acquired. In the museum context particular meanings may emerge or become more dominant with the interpretation of the exhibition's authors.

The exposition *Musical Instruments of the World* displays similar instruments of folk and professional cultures of the five continents. Some of them preserve their sound qualities while the others lose them in the course of many centuries. Frequently an artifact maintains many functions – documentary features, exterior expressiveness, or representative character and in a museum exhibit may be the central interest as the instrument's sound aesthetic and sacral properties, if they were inherent, moved to the background. Topics covered include: Instruments with exclusive decorative features; Memorial musical instruments and their own unique biography; Musical instrument as a document of the epoch.

Tatiana Ginzburg has served as the academic secretary of the Glinka National Museum Consortium of Musical Culture since 2010. She graduated from the Museology department of the Russian State University for the Humanities in 1996 and is author of a number of popular articles about the museum and its collections and the monograph "Museum of Musical Culture" (Moscow, 2003).

**Tobias Norlind: First Swedish Organologist
Benjamin Vogel
Lund, Sweden**

Tobias Norlind (1879-1947) was the first Swedish musicologist and organologist. Although well educated in music and music history at Swedish (Lund) and German (Munich, Berlin) institutions of higher learning, he was never given a university research position. For many years he worked as a high school teacher and principal (1904-1918), and a botanist. In 1909, he was awarded the titular position of associate professor in literature and music history at one of his alma maters, the University of Lund. In 1918, he obtained a position at the Stockholm Music Conservatory as teacher of music history and aesthetics. A year later (1919) he became curator of Stockholm's Music History Museum, where he worked on putting in order and organizing the collection of musical

instruments. He took the opportunity to study instrument history and classification. At first, he published mostly popular works, such as *General Music History* (1922), *Short Music History Handbook* (1923), and *Beethoven and his Time* (1924). Finally, he developed his own classification system for musical instruments based on Sach/Hornbostel and published the two-volume *Systematic der Seiteninstrumente* (1936-9). Norlind was also the founder of the Swedish Musicological Society and founder and editor of its *Journal*, still published today. My discussion of this author of many books and articles on music history and music instruments, a musicological giant from Curt Sachs' time will be, alas, limited to his work on systematization of musical instruments, and as organologist.

Benjamin Vogel holds a doctorate in musicology from the Institute of Musicology, Warsaw University (1977). For many years he was an associate professor there, since 1997 at Lund University, Sweden, since 2003 at the Szczecin University, Poland, since 2011 retired. He has held the positions of research associate at Indiana University and research fellow at the Institute for Advanced Studies in the Humanities at Edinburgh University. For many years he has specialized in the history of musical instrument industry and he has contributed many articles on that subjects to Polish and Swedish music journals, as well as to *JAMIS* and *GSI*. Prof. Vogel is the author of five books on Polish musical instruments.

Identification Marks on Historic Plucked Instruments: What Do They Reveal?

Panagiotis Pouloupoulos

Deutsches Museum, Munich

One of the most distinctive and sometimes controversial features of historic musical instruments concerns the presence of decorative identification marks. These marks, typically placed on visible parts of an instrument, include several noteworthy details, such as names, addresses, dates, images, serial numbers or other symbols. Such "trademarks," which may add considerably to the authenticity and commercial value of an instrument, have been commonly used by instrument manufacturers for centuries as an inexpensive means of advertising and, at the same time, as a way of protecting their products against competitors and imitators.

More importantly, these marks often reveal significant information on the manufacture and marketing of instruments, as well as on the social, economic and cultural background of their makers. In the case of historic plucked instruments, especially those dating from the late eighteenth and early nineteenth centuries, a wide variety of marking methods has been employed by manufacturers, including inscriptions, printed labels, marks with a branding iron, inked stamps, and engravings on metal components. It is interesting that some instruments from that age bear multiple marks, while many unsigned instruments have marks on movable parts, such as tuning mechanisms, roses, hammering devices or other accessories. However, despite the

amount of historical and technological evidence they encompass, until now these marks have not been systematically researched.

This paper will present examples of identification marks on several plucked instruments of the lute, cittern and guitar families dating from the late eighteenth and early nineteenth centuries, analyzing their role and significance. Moreover, the paper will discuss how the changes in marking techniques around that time illustrate a clear shift from pre-industrial practices to mass-production methods involving division of labour and stockpile of instruments. The examination of surviving instruments, supplemented by the investigation of archival sources, will attempt to shed more light on the organization and development of the instrument-making business during this important period of music history.

Panagiotis Pouloupoulos studied Conservation of Antiquities and Works of Arts at TEI Athens. During his undergraduate training he developed an interest in the history, use and preservation of musical instruments. From 2006 to 2011 he was a postgraduate student at the University of Edinburgh, where he completed an MMus in Musical Instrument Research, with a focus on plucked stringed instruments, and subsequently received a PhD in organology, with the thesis “The Guittar in the British Isles, 1750-1810.” Panagiotis is currently scholar-in-residence at the Deutsches Museum investigating modifications on historic stringed instruments.

The Piano-Forte Guitar
Daniel Wheeldon
London Metropolitan University

After its invention in 1783, the innovative piano-forte guitar was produced for only a decade, after which it was simply forgotten. An instrument based on an English guitar, it could accurately be called a cittern influenced by the piano. The instrument is played much like an English guitar with the left hand, but instead of plucking the string with the fingers of the right hand, keys are pressed, operating the hammer mechanism.

Its invention was in itself a matter of controversy, as the patent was won by Christian Clauss in a legal battle with Longman and Broderip who also laid claim to the instrument. This ingenious design was well thought out, and surviving instruments show that it was skillfully constructed; the concept was innovative and the tone would have no doubt been unique. Why then did this instrument fail to succeed in the music world?

Daniel Wheeldon graduated last year with a first class bachelor’s degree in Musical Instruments. Having a background with wood furniture making, he is currently funding his research with guitar construction, repair, and maintenance. Aside from the “English Guitar” the current focus of his practical work, he is also involved in the construction of more modern guitars.

Who Was Behind the Making of the First Spanish Guitars in London?

James Westbrook
Cambridge University

Before Fernando Sor came to London in 1815, and before Louis Panormo started making guitars, Spanish guitars were already being made, played, and written for in London. Until now, these pre-Panormo guitars were believed to have been made as five-course guitars by the English cittern maker John Preston, primarily because of their decorative elements. This paper not only sets out to discredit this, but suggests the personalities which lay behind the very beginnings of the London school of guitar making, and goes on to show that besides the “regular” six-string examples, those with seven and eight tuning pegs were what we now loosely class as “harp-guitars.”

James Westbrook is an organologist whose particular interest is in guitar construction. He is the author of two popular books: *Guitars through the Ages* (2002) and *The Century that Shaped the Guitar* (2006). He has given papers for the Galpin Society, San Francisco Conservatory of Music, Cremona Mondomusica, European Guitar Teachers Association, and Guild of American Luthiers. In 2010 James was awarded the O’May studentship by Wolfson College, for his continuing PhD research in to *Guitar Making in Nineteenth-Century London* at the University of Cambridge: a multidisciplinary project, which includes historical and musicological research, CT scanning, dendrochronology and acoustical testing.

Cornetti and Trumpets Created for the Rich and Powerful

Sabine K. Klaus
National Music Museum, Vermillion

Musical instruments have been considered collectable since the Renaissance, finding their way directly into royal and aristocratic collections of arts and curiosities. Instruments commissioned by collectors, focussing on visual beauty and artistic craftsmanship rather than musical quality alone, differ from those made for the musician. Instruments that have come down to us from Renaissance collections, such as the Ambras collection in Vienna, have spent their entire existence in a museum setting; some are prime examples of their kind and in pristine condition. In some cases, they reveal, however, that visual beauty was of greater importance than musical quality.

I explore this topic with a focus on cornetti and trumpets made for collectors from the sixteenth through the twentieth century. The Joe R. and Joella F. Utley Collection at the National Music Museum contains a number of trumpets commissioned specifically for this collection, as well as a Renaissance cornetto that could have been part of a sixteenth-century curiosities cabinet. They provide a first-hand insight into musical instrument making that is centered on the looks as much as the sound.

Sabine K. Klaus is the Joe R. and Joella F. Utley Curator of Brass Instruments at the National Music Museum, University of South Dakota, where she also teaches organology.

She received her PhD from Tübingen University, Germany, with a dissertation on the history of stringed keyboard instruments. In the past she worked for several musical instrument museums and collections in Europe (Basel, Nuremberg, Vienna) and held an Andrew W. Mellon Fellowship at The Metropolitan Museum of Art, New York.

She researches and publishes mainly in the areas of historic brass and stringed keyboard instruments and is the recipient of the 2000 Frances Densmore Prize of the American Musical Instrument Society. She works on a multi-volume book series on the history of high brass instruments, based on the Utley collection, of which volume 1 will be available in the spring of 2012.

A Breath of Beauty at the National Music Museum

Ana Sofia Silva

University of South Dakota

The decorative arts deal essentially with the design and manufacture of functional objects, which, in turn, are associated with the history of craftsmanship in general. Sixteenth- and seventeenth-century collections of musical instruments often included extremely decorative showpieces, typically made of exotic materials or in unusual shapes or forms. Although the desire for such attractions remained in the Industrial Age, the advent and use of standardized, highly developed technologies for instrument design and manufacture affected the types of decoration that could be employed.

Musical instruments do not require decoration to produce sound, and undecorated instruments were the norm. However, those instruments that were decorated became prized by collectors and many are exhibited in museums. This paper will present some nineteenth-century examples in the collections of the National Music Museum, focusing on brass instruments, the decorative aspects of which have not received much attention.

In general, decorative techniques were chosen that would not affect the acoustical function. In contrast to earlier periods, decorated instruments retained the basic form and material (brass) of standard production models. Use of exotic materials (e.g., a keyed bugle made of tortoise shell by George Shaw, Connecticut, 1845) was rare. Also increasingly rare was the previously common application of solid metal castings, with light sheet-metal *repoussé* work as an occasional substitute. A common special decorative treatment was plating with nickel, silver, or gold. After the temporary vogue for ornamental painting (as in a cornet by Guichard, Paris, 1835), more or less elaborate engraving became the most common mode of decoration. Contrary to the general trend was the phenomenon of encrusting instruments with simulated gems (as in cornets made

by Besson, in London, and Conn, in Elkhart, both dating from 1883), presumably for use mainly as showpieces for trade expositions.

These ornamental techniques and the styles of decoration employed in musical instruments can be related to other functional objects of the period, in order to understand how and why they were made and used.

Ana Sofia Silva is a student in the University of South Dakota's program for the master of music degree with specialization in the History of Musical Instruments, centered at the National Music Museum, where she also works as a graduate assistant. In Lisbon in 2006 she received a Licentiate degree in Conservation and Restoration, followed by further training and internships at the Ecomuseu Municipal in Seixal, the Music Museum in Lisbon, and The Metropolitan Museum of Art in New York. She also worked for three years in the repair, maintenance, and restoration of musical wind instruments at a firm in Lisbon.

Little Things Mean a Lot: The Quest for the Ideal Brass Instrument

Robert Pyle

S. E. Shires Co.

Recently there has been considerable discussion in the acoustics community as to whether the behavior of a brass instrument is affected by its overall structure or whether it depends purely on the shape of its air column (bore profile). While some scientists believe the bore profile is all-important, it is generally accepted by players and builders of brass instruments that instrument response and timbre are significantly affected by seemingly minor changes in the construction of the instrument that do not alter the shape of the air column. This talk will present the opinions of players and makers as learned through personal interviews and from advertising literature. Particular attention will be paid to the collaboration between builder and player to tailor an instrument to the wishes of an individual player. The development of an E-flat trumpet has proved particularly instructive in showing that the external structure of the trumpet can have a major influence on its playing qualities.

Robert Pyle is the acoustics engineer for the S. E. Shires Co., makers of trombones and trumpets. He is a current member of the Technical Committee for Musical Acoustics of the Acoustical Society of America, and is a member of several other professional societies dealing with acoustics and musical instruments. He is an amateur performer on the horn.

Harp Guitar: What's in a Name?

Gregg Miner

The Harp Guitar Foundation

This paper will survey the wide variety of instruments collectively known today as harp guitars. It will examine the group from a modern organological viewpoint, and include an overview of historical forms and configurations. Additionally, it will investigate the provenance and conflicting definitions of the term “harp guitar,” which has been unsystematically applied to various plucked stringed instruments for over two centuries. In addition to analyzing and comparing these instruments, the paper will examine the larger number of harp guitars that have been known under by many other names. Finally, justification for new terminology and modern organology will be given, as well as a consolidated modern definition.

Gregg Miner collects, plays, researches, writes about, buys and sells harp guitars; he also produces harp guitar CDs; currently runs Harpguitars.net, and Harp Guitar Music; and is president of the non-profit Harp Guitar Foundation. You would think that by now he would be sick of harp guitars, but he is not. Miner also curates the private Miner Museum of Vintage, Exotic & Just Plain Unusual Musical Instruments. He spends his days incognito as a Northrop Grumman manufacturing engineer. He resides in southern California with his wife, Jaci and two little dogs, neither of which has shown any aptitude for the harp guitar.

Metamorphosis - The Musicians' Effect on the Development of Musical Instruments

Bengü Gün

As research in musical instrument museums all around the world would support, musical instruments are constantly going through a metamorphosis. Some instruments change in their physical appearance and some change in technical properties. This transformation in functionality and shape follows both the rise of new music styles and technological opportunities including new materials. This change is sometimes so slow that we can only observe it through time as in the case of the evolution of the classical guitar. However, occasionally it is faster and finds us in a concert hall. On the stage, we may suddenly witness a fretless guitar or a guitar with eleven strings. As audience members, we may be surprised but also be satisfied with what we hear and how the limits of an instrument can be carried to another level. The question is what lies underneath this transformation?

Does the instrument maker decide to change the functionality, or is it the musician who is not satisfied with the existing functions that the instrument provides? How often is it related to the openness and creativity of the instrument maker? With this presentation, I

would like to dwell on some instrument transformation stories that push the limits, and discuss the joint effort of the musician and the instrument makers during this process.

Bengü Gün received her BA degree in management from Boğaziçi University, Turkey, in 2005. She then pursued an MA in Anatolian Civilizations and Cultural Heritage Management and worked as a research assistant at Koç University, Turkey. At Koç University, she mainly focused on musical instruments museums with a thesis on “Musical Instruments Museum Collection Management Policies”. She presented papers in the First International Student Symposium on Folklore and Ethnomusicology organized by Istanbul Technical University Music Science Club (*Living Music on Musical Instruments Museum*, 2008) and CIMCIM conference (*Virtual or Actual*, 2009). She is currently working at İstanbul Museum of Modern Art as the membership manager.

Paracho, a Unique Luthier Mexican Town

Charlene Joyce Alcántara Bravo and Lyla Patricia Campos Díaz
Escuela Nacional de Conservación, Restauración y Museografía, Mexico

Paracho is a town in Michoacán, Mexico, renowned for guitar production. Its complex history extends back to 1533, when natives began their relationship with the Spanish people. Unfortunately, the lack of written documentation has led to the loss of specific data, complicating the study of Paracho’s history.

The city’s luthier tradition, one of the oldest in Mexico, started with the production of vihuelas for the nearby settlements. Lutherie began as a family business, a tradition kept up to present time. Workshops are still formed by family members, and are divided into three main areas: handcraft, mass production and export workshops. Each workshop has a unique style, incorporating and developing different materials and structural elements. Paracho has an average production of 3,500 guitars per day, where Flamenco, Student and Concert models are the most important. Furthermore, Paracho has developed its own model, the *guitarra Paracho*, which has the largest production.

Today, Paracho’s guitar production reaches national and international markets, supported by the Club de Lauderos (Luthiers Club), founded in 1993; this association began with support from the state government and a cultural organization, Casa de la Cultura. Additionally, national and international teachers from Spain, France and the United States of America taught guitar construction courses to the local people.

Charlene Joyce Alcántara Bravo is a conservator and graduate of the Escuela Nacional de Conservación Restauración y Museografía “Manuel del Castillo Negrete” (National School of Conservation, Restoration and Museography) in Mexico City, where she currently is participating as an assistant conservator in the Conservation Laboratory of Musical Instruments, also collaborating in the conservation project of the historic pipe organ from San Juan Tepemasalco, Hidalgo.

Lyla Patricia Campos Díaz holds a first degree in Restoration from the Escuela Nacional de Conservación, Restauración y Museografía “Manuel del Castillo Negrete” in Mexico City. She selected the Course-Workshop for the Conservation and Restoration of Musical Instruments, which led her to her thesis project entitled “Varnish Identification by Thin-Layer Chromatography.” Since 2005 she has participated in several conservation projects. Currently she is studying in a master of business administration program at the Instituto Tecnológico Autónomo de México.

Conical Expansion in Eighteenth-Century English Natural Horns **Stephen Loikith**

The use of conical expansion in the eighteenth-century natural horns is a significant advancement in the development of the construction of the orchestral horn, specifically seen in the English-made instruments. Prior to this construction style, more primitive examples of pre-1700 French hunting instruments show an abrupt style of expansion, expanding only through attaching a new tube to the body of the instrument. As this style progresses through the late seventeenth and early-eighteenth century, more gradual but less substantial expansion can be seen in the first coil, something that can be seen in early English and German examples.

The instruments from early to mid-eighteenth England were influenced by the earlier German styles and are the culmination of this constructional style. The studied samples by London-based makers John Christopher Hofmaster and Nicholas Winkings, among others, consistently showed a rate of expansion of three millimeters in the first coil of the instrument, which is unique to English instruments. This expansion, found most clearly on fixed pitch instruments, is also found in the terminal crooks of the English hand-horns, thus demonstrating the role of the crook as the first coil of a crooked instrument. Surviving fixed-pitched horns and hand-horns at the Bate Collection of Oxford University and the collection of Edinburgh University demonstrate this trend, and are the focus of this study. With data collected from physical examinations of these instruments, I am looking to prove that this style of expansion, based on its consistency and prominence in the surviving instruments, is a distinct trait in their instruments and their impact on the further development of the instrument.

Stephen Loikith holds a master of fine arts degree in musicology from Brandeis University. His research focuses on early music organology, specifically the baroque horn’s evolution through the eighteenth century, and baroque horn performance practice. In the spring of 2010, he presented his research at the “Heinrich Isaac and his World” conference at Indiana University. He is also an active French hornist in the Boston area, performing on both modern and natural horns.

Measurement of the Evolution of Cornet Acoustics

Carol A. Abbott

Ohio University

An inexpensive and uncalibrated technique for measuring the input impedance of small brass instruments will be described, and used to measure and compare the acoustic evolution of cornets from the late nineteenth century through the early twenty-first century. The acoustic characteristics of interest are the harmonic components of the input impedance for all valve combinations. The measurement technique uses a piezo (? capitalize) disk as an acoustic source at the instrument mouthpiece and a small electret (? same) microphone inside the mouthpiece to measure instrument response. Frequency sweep signals are sent and data collected with a laptop computer running audio processing software. This technique was first described by Arthur Benade, developed by Peter Hoekje, and refined for this study by the author. The validity of the measurement technique is discussed.

Results for several different parameters, both measured and calculated from measurements, are presented graphically. These results are evaluated to provide an overall determination about the acoustic quality of each instrument. This includes comparison of height of adjacent impedance peaks, equivalent fundamental pitch values and equivalent fundamental pitch tuning errors. Instruments from different manufacturers and throughout the time period will be measured. The main goal in the evaluation of results will be to discover acoustic improvement in newer instruments, and to describe these improvements through a graphical comparison of measurement data.

Carol A. Abbott recently received her PhD in Interdisciplinary Studies (History, Music and Physics) from Ohio University, where she studied various contexts of a comic opera composed in Lancaster, Ohio, in 1892. She is currently an adjunct faculty at the Ohio University-Lancaster campus. She holds Bachelor's and Master's degrees in Mechanical Engineering from The Ohio State University and is a registered Professional Engineer. Ms. Abbott's interest in musical instrument acoustics developed during a 27-year association as a volunteer and staff member of the Lancaster Festival.

Hawkes & Son: Image and Reality

Jocelyn Howell, City University, London

Arnold Myers, University of Edinburgh

The name of Hawkes is most widely recognised through its association with that of Boosey. In the early years of the twentieth century, the firm of Hawkes & Son rose to a position of both significant market share and esteem as makers of high quality brass and woodwind instruments. The image projected by the firm's trade catalogues was modernity and confidence: the band instrument catalogue cover showed an idealized workman, highly skilled but muscular, bending a french horn bell-pipe, while the

orchestral instrument catalogues exuded elegance. The later publications boasted images of the extensive new factory the firm built at Edgware, covering one acre.

This paper presents the positive imagery employed by the firm and compares it with the development of the product range to meet the changing market and the financial state of the company. This increasingly diverged from the image until the merger with Boosey & Co. in 1930.

Jocelyn Howell studied clarinet under John Candor at Trinity College of Music (London) and completed her masters with distinction in clarinet performance under David Campbell at Canterbury Christ Church University(Kent). She received an Arts and Humanities Research Council collaborative doctoral award at City University (London) and the Horniman Museum, and is currently researching the corporate history of Boosey & Hawkes and related musical instrument manufacturing companies. She is contributing to the *New Grove Dictionary of Musical Instruments*.

Arnold Myers completed his doctorate at the University of Edinburgh with research into acoustically based techniques for taxonomic classification of brass instruments. He is a contributor to the *New Grove Dictionary of Music and Musicians* and the *New Dictionary of National Biography*, and one of three authors of *Musical Instruments: History, Technology and Performance of Instruments of Western Music* (Oxford, 2004). He is the chairman of the Edinburgh University Collection of Historic Musical Instruments, edits the ongoing Catalogue of the Collection, and teaches as a professor in the University of Edinburgh. He was the recipient of the 2007 Curt Sachs Award of the American Musical Instrument Society.

**Portraits of Private Music: Case Studies in the Music,
Musical Instruments, and People in Holocaust Concentration Camps
Jayme Kurland
Arizona State University**

This presentation will focus on music played in concentration camps during the Holocaust, specifically instrumental music, and the lengths to which musicians would go to acquire instruments for personal use. An examination of memoirs, songs, and historical accounts and anecdotes constructs a portrait showing that private music making was a widespread, important part of prisoner life across many different ghettos and concentration camps.

The Third Reich enforced strict rules and laws about music and music making in an effort to diminish this powerful means of self-expression and a source of happiness for the prisoners. In Jewish ghettos and concentration camps during the Holocaust, Nazis organized prisoner orchestras and musical ensembles. These ensembles served propaganda purposes, were a way of entertaining SS officers and their guests, and a vehicle to embarrass, humiliate, and even physically harm the prisoners. While these

orchestras performed publicly, many prisoner musicians (both amateur and professional) risked their lives by making their own hidden music outside of Nazi supervision, fully aware of the potentially fatal consequences. The music venues were not glamorous, and included hospitals, camp barracks, kitchens and even latrines. Also outside sanctioned ensembles, prisoner musicians actively broke the rules by smuggling instruments into camps, performing banned works, and uniting with each other in places that were meant to divide them.

Classical, folk, and jazz genres were heard throughout most camps, and music was both organized and spontaneous. Musical topics ranged from the nationalistic, to the sacred and the profane, as prisoner-composers often documented the ghastly living conditions for future generations. Furthermore, music provided a sense of distraction, and temporary enjoyment, and though rarely documented, supported resistance and prompted upheaval. Most surprising is the evidence showing leniency of Nazi officers, who sometimes allowed and even participated in this secret music.

Jayne Kurland is currently pursuing her MA in music history and literature at Arizona State University. After receiving her BA in music history at the University of Oregon, Jayne was hired as a curatorial assistant at Phoenix's Musical Instrument Museum, and later as the artist coordinator for the MIM Music Theater. In addition to her academic studies, Jayne actively performs as a violist and is co-founder of Classical Revolution Phoenix, an organization devoted to bringing classical music to alternative venues throughout the Phoenix metro area.

The Arts and Artists of Musical Instruments: Ingrid Larssen – A German Saxophone Virtuoso in the Nazi-Era Heike Fricke

At the beginning of the twentieth century the saxophone was not very popular in Germany. Richard Strauss, for example, could hardly find four saxophonists for the premiere of his *Sinfonia Domestica* in Berlin in 1903. It was the Berlin composer Gustav Bumcke who met Adolphe Sax's son in Paris in 1902 and brought eight saxophones of different sizes to the German capital. Finding few ambitious saxophone virtuosos, Bumcke taught one of the first saxophone classes in Germany at the Stern'sches Konservatorium, Berlin, and dedicated most of his creativity to promoting the classical saxophone. Already during the 1920s conservative and national-socialistic circles ostracized the saxophone, not only because of its "vulgar" sound, but also because of its significance in jazz music, which was considered to be "weird and pestilent." Later, swing and jazz music were forbidden in Nazi Germany.

One of the most popular saxophone players during the Nazi era was Bumcke's daughter Hilde Bumcke. Using the Nordic sounding stage name *Ingrid Larssen*, she succeeded in overcoming the rejection of the Nazis towards the instrument. Today we

may regard Ingrid Larssen's ability to assert herself with mixed feelings, because rivals like Sigurd Rascher emigrated from Germany, and many of the so called "swing kids" suffered from brutal punishment during the Nazi-Era.

The Museum for Musical Instruments SIMPK in Berlin preserves not only Ingrid Larssen's G. A. Hüller alto saxophone, but also her collection of program notes, newspaper reports and reviews documenting her career. An examination of these documents will not only throw light on the history of the saxophone in Hitler's Germany, but also illuminate strategies of artists to survive in Germany during the era.

Heike Fricke is the editor of 'rohrblatt, a magazine for reed players.

Picturing the Art of Instrument Design: A Manufacturer's Photo Album
E. Bradley Strauchen, Horniman Museum, London
Arnold Myers, University of Edinburgh

The first half of the twentieth century was a period of refinement and adjustment in the design of wind instruments as styles and genres in music making developed and international influences strengthened. One major manufacturer, Boosey & Company (and later Boosey & Hawkes), recorded newly developed and custom-built brass instruments in an album containing high-quality photographs from the period 1898 to 1941. These images illuminate the production records in the firm's workshop order books and complement the technical drawings that survive. Of the more than eighty instruments photographed, only one can be located and a further one is known to be extant. The album also includes measurements and photos that Boosey took of instruments made by their rivals. Their inclusion gives insight into which design trends Boosey perceived to be important.

Were the instruments pictured in this album esoteric experiments in the art of design or did they influence mainstream production? Who led taste in the changing instrument design preferences of the early twentieth century and how did manufacturers respond to these trends? This paper will address these questions by considering the developments and instruments documented in this photo album. Finally, the identity of the photographer who compiled this valuable resource is suggested.

E. Bradley Strauchen studied music history and organology at the University of Oxford, where she received her PhD. As a deputy keeper at the Horniman Museum, she works with the collections of western instruments and curates the Boosey & Hawkes Collection and Archive. Her research has focused on making music in Britain in the broadest sense, from instrument manufacturing to the performance and reception of instrumental music, ranging from home to music hall, band and orchestra. Publications include contributions to the Grove dictionaries, various journals and conference proceedings. Bradley is active as a lecturer and is the secretary of CIMCIM.

Arnold Myers completed his doctorate at the University of Edinburgh with research into acoustically based techniques for taxonomic classification of brass instruments. He is a contributor to the *New Grove Dictionary of Music and Musicians* and the *New Dictionary of National Biography*, and one of three authors of *Musical Instruments: History, Technology and Performance of Instruments of Western Music* (Oxford, 2004). He is the chairman of the Edinburgh University Collection of Historic Musical Instruments, edits the ongoing catalog of the collection, and teaches as a professor in the University of Edinburgh. He was the recipient of the 2007 Curt Sachs Award of the American Musical Instrument Society.

Curt Sachs and the Foundations of Musical Organology **Renato Meucci**

The manifold, overwhelming scientific production of Curt Sachs (1881-1959) leaves a present-day student nearly stunned, especially given the limited bibliographic and technological resources available in his time.

Examined in chronological order, his output reveals a step-by-step program for founding the science of musical instruments (or organology), beginning with the publication of a dictionary of musical instruments, then a study of classification, a history, and eventually a catalog of musical instruments in the collection of the Berlin Hochschule für Musik. Later, Sachs opened his perspective to the latest developments in anthropology, in particular the theory of cultural circles and their diffusion (*Kulturkreislehre*). This allowed him to propose an ingenious chronology of appearance of various types of musical instruments.

During his last years in Germany, Sachs oversaw a pioneering series of early-music recordings on period instruments and wrote a global study of dance (1933). Sachs then took refuge in Paris, where he published a major paper on the role and tasks of musical instrument museums. At the same time, he oversaw a French equivalent of the German recording series.

In 1937 Sachs moved with his family to New York City, where within three years he published his *History of Musical Instruments*, the last and most famous of his books. With this publication, the foundation of our discipline was manifestly accomplished. From that point on, Sachs devoted his attention to the music of antiquity; the history of tonality, rhythm and tempo; music history; ethnomusicology and, above all, to a fascinating new thesis about the kinship (or commonwealth, as he termed it) of all arts.

Renato Meucci, born in 1958, studied guitar and horn at the conservatories of Rome and Milan and classical philology at the University of Rome. After working as a free-lance horn player during the same ten years, he turned to musicology and published papers on history, archeology, iconography, performance practice, and musical instruments in books and journals in Italy, Switzerland, Germany, England, Austria, France, and the United States. He has taught the history of musical instruments at the

University of Parma (1994–2000) and Milan (2001–present) and music history at the conservatory “G. Cantelli” of Novara, where he assumed the position of dean in 2011. The Historic Brass Society presented him with the Christopher Monk award in 2003, and the Galpin Society with the Anthony Baines prize in 2010.

Lorenzo Gusnasco in Venice: Between Art, Artist and Trade Relations
Emanuele Marconi, Italian Ministry of Cultural Heritage, Milan
and Jean-Philippe Echard, Musée de la musique, Paris

Lorenzo Gusnasco, also called Lorenzo da Pavia (*d* Mantua, 1517), was not only a luthier living for many years in Venice, but also an agent for Isabella d’Este, commissioned to find precious objects, furniture, jewels for the noble purchaser, and to keep up good relationships with artists and painters as great as Mantegna, Bellini, Perugino and Leonardo.

Isabella d’Este was one of the main architects of the artistic splendor of the Gonzaga court, at the center of a dense network of relationships among the major intellectuals of the time. In addition to feeding a great passion for music and sponsoring the most famous musicians of the time, she was a virtuoso of the lute and a great singer.

Among Gusnasco’s production of organs, lutes, clavichords, harpsichords and violas, the only extant instrument is probably the paper-pipe organ, dated 1494, widely mentioned in correspondence (seven of 182 letters, dating between 1496 and 1515) with Isabella, seen by Francesco Sansovino in Caterino Zen’s studio in 1580 and today kept in the Correr Museum in Venice.

The making of this organ – the pipes were made of rolled paper sheets – implies *savoir faire* outside the traditional technological background of an instrument maker. Recent findings on the materials and techniques used to make the pipes raise questions of possible shared technological knowledge between an innovative instrument maker and paper craftsmen in Venice, then the leading European centre for paper making, book printing, and trading of paper-based objects. These new insights suggest that Gusnasco’s activity – a perfect synthesis of craftsmanship and artistic sensibility – was closely linked to the social, cultural, artistic and economic fabric of Venice.

Emanuele Marconi has a musical instruments restoration diploma (2004) and a bachelor’s degree (2008) in Conservation of Historical and Musical Heritage.

He is a consultant for the Italian Ministry of Cultural Heritage, Direzione Regionale per i Beni Culturali e Paesaggistici della Lombardia, in Milan, and has been working as technical and scientific lead of the Correr Museum project since 2007. From 2006 to 2010 he has been external assistant of the curator F. Tasso at the Museum of Musical Instruments of Milan. In 2010 and 2011 he worked several months for the Musée de la Musique in Paris.

Jean-Philippe Echard has a master's degree (1998) and a PhD (2010) in chemistry. He has been working at the Laboratoire de recherche et de restauration of the Musée de la Musique in Paris since 1999. He was a Charles E. Culpeper Fellow at the Scientific Department of the National Gallery of Art in Washington, DC, in 2004-5. His principal interests are the complementarity of historical and material sources for the knowledge of history of varnishing and painting techniques and the methodological developments of observation and analytical techniques applied to cultural heritage artifacts.

The Musical Instruments of Emilius Scherr: Fine Instruments – Fine Furniture
Darcy Kuronen
Museum of Fine Arts, Boston

Philadelphia craftsman Emilius N. Scherr (1794–1874) is survived by a relatively small number of his musical instruments, but many of them are quite notable in their visual design and decoration. His unusual harp guitars, patented in 1831, always draw attention because of their unusual shape. But the stenciled gilt decoration he applied to many of them, along with carved eagle heads surmounting the peg heads, shows him to have been well aware of the furniture styling of the time, especially as practiced in Philadelphia. Although hardly necessary for the quality of sound, these added visual touches surely helped attract more buyers to this unusual guitar.

Even more notable from a decorative standpoint are two recently-discovered reed organs produced by Scherr in the 1830s or 1840s. Remarkable enough as the only known reed organs produced in Philadelphia during this period, their design and casework again show perceptive understanding of trends in the then-fashionable Empire style. Both organs are what could be termed workbox instruments, as their relatively deep lids contain fold-down trays with several lidded compartments for sewing supplies, cosmetics, and other notions. That their target buyers were clearly women is underscored by the quite narrow keys, which allowed Scherr to squeeze five octaves (an unusually large range for this time) into a very compact case.

Scherr's handful of surviving pianos have been less studied, but it is clear that they, too, were decorated with fine woods and gilded motifs in tune with the best furniture styling of the period. Using images and period citations, I will show how Scherr's instruments were designed, decorated, and marketed, and how such instruments have often risen to a more desirable level of collectability and survivability because of their aesthetic features.

Darcy Kuronen has worked since 1986 at the Museum of Fine Arts, Boston, where he is the Pappalardo Curator of Musical Instruments. In 2000 he organized the critically acclaimed exhibition *Dangerous Curves: Art of the Guitar*, celebrating the diversity of guitar design over four centuries with 130 instruments from private and public collections. Kuronen serves as volunteer curator to the historical instrument collection

owned by the Boston Symphony Orchestra. He attended the University of South Dakota in Vermillion, receiving his undergraduate degree in harpsichord performance and a Master of Music with a concentration in the history of musical instruments.

The Wheatstone Patent Concertina

Neil Wayne

The Concertina Museum

The Wheatstone Patent English concertina and its subsequent “new” fingering systems and designs came into being in the 1820s and '30s, when advances in metalworking, alloys, machining tools, early mass-production techniques, and skilled marketing came together, enabling these complex and often highly decorative mechanical instruments, containing up to 4,000 parts, to be created and sold in great numbers. The 50 or more examples of the earliest (pre-1000 serial numbered) Wheatstone concertinas in the Concertina Museum collection reveal in detail the steady evolution of a small acoustic curio into a fashionable and often decorative instrument of music in the 1840s to 1860s. Concertinas were often decorated in gold and silver-gilt, with pearl and silver inlay, and with gilt-stamped leatherwork. Concertinas were made using ivory or rare and figured woods such as amboyna, rosewood, she-oak, and ebony. Such instruments are recorded in the Wheatstone sales ledgers as selling for around ten guineas (the equivalent of £5,120 today), ensuring that the first flood of concertina buyers were almost exclusively the upper classes.

The four hundred or so concertinas in the Museum Collection represent the varied designs and decorative styles of all known British and European artisans and engineers that began making their instruments from 1840 onwards.

Throughout its mid-Victorian hey-day, the concertina appeared in a wealth of paintings, daguerreotypes, stereographs, paintings and *cartes de visite*, and became the instrument of choice for those posing in fashionable images and portraits. Towards the 1880s, the concertina's social mobility and decline in price caused the instrument spread to working-class soloists, music-hall players, and amateur enthusiasts, when once again decorative, highly inlaid and colourful instruments appeared.

What gave rise to this little instrument's extraordinary social mobility, and its spread throughout the music of so many countries? In no small part, its charm, its most decorative character, and its ease of playing give some of the answers. This paper will demonstrate, using a wealth of images, the progress of Wheatstone's invention.

Neil Wayne completed a first degree in Applied Biology at Brunel University and University of Wisconsin-Madison, and continued some PhD-level biochemistry research as a Senior Demonstrator at the University of Nottingham. His concertina research, inspired by meeting Frank E. Butler, grandson of a Victorian concertina-maker, has involved editorship of *Free Reed – The Concertina Newsletter*, which ran to over 30

issues and 3,000 subscribers during the 1970s. He founded the Free Reed record label in 1976; it remains a specialist source for recordings of Britain's surviving concertina players.

From the early 1970s to 1996, he formed a major collection of concertinas, related European free-reeds, and prototypes, together with an archive of images, music, original documents, and Wheatstone memorabilia. In the mid-1990s, the Horniman Museum, London, acquired his first collection; hitherto, this family of instruments had never before been fully conserved or displayed in any of the world's museums. His current collection of over 400 concertinas and many hundreds of archive items and related instruments is catalogued on-line at www.concertinamuseum.com. Publications include two papers of the history of the Wheatstone concertina (*Galpin Society Journal*, 1992 and 2009), *Free Reed Magazine*, articles in many musical magazines, radio programs on the instrument, and a publication summary page on the research website www.concertina.com/wayne.

The Ondes Martenot: An Intelligent Human-Centered Design
Laurent Quartier, Stephane Vaiedelich, Ivan Guillot,
and Valerie Hartman-Claverie

Designed in the 1920s and presented in concert from 1926, the Ondes Martenot (named after its French inventor, Maurice Martenot) has spanned the twentieth century and inspired many distinguished composers, including Olivier Messiaen. The style of the instrument reflects the author's strong intention to make its aspect or shape a representation of its new and unique sound. Using modern materials and modernist shapes in collaboration with the Gaveau firm of piano makers, he sought to correlate aesthetic substance and form of the instrument.

From the functional point of view, three main blocks constitute the instrument. In the first place, the system of creation of the electrical signal, consisting of two oscillators (one at fixed frequency, the other in scalable frequency) generates an electrical current of variable frequency. Downstream, one or more systems of transducers transform the electrical signal into sound waves. Upstream, the controller ("the key component of the instrument," as Martenot used to call it) contains a powder whose dielectric properties are a large part of the musical secret of the Ondes.

This paper will show that the design and timbre of the instrument and the musical gestures of the instrumentalist make the Ondes Martenot an entirely new invention, upsetting traditional approaches and the instrument-instrumentalist linkages that predated its emergence.

Much of the work of Maurice Martenot revolves around pedagogy; this instrument perfectly illustrates his concern to place the musician in the center of the creative process, which he summarized in a sentence: "the body is itself and foremost the instrument."

Laurent Quartier is a French CNRS engineer (National Centre for Scientific

Research) in physics since 1996. In 2009, he joined the L.A.M. team (Luthery, Acoustics and Music) at the Institut Jean le Rond d'Alembert (research laboratory specializing in mechanics). Within this team dedicated to Musical acoustics, he studied in particular Martenot waves. *website* : www.lam.jussieu.fr

Stéphane Vaiedelich is the head of laboratory (Research and Conservation Laboratory) of Museum of Music, at Cité de la Musique in Paris. After a formal training in lutherie (Musicora Prize, 1999), he completed his scientific background in physics and physical chemistry, and also holds a master of conservation and restoration of cultural property. *website* : www.cite-musique.fr

Ivan Guillot works as a professor in the Institute of Chemistry and Materials Science of the University Paris-East Créteil (ICMPE - UPEC), which is one of the leading research centers in chemistry and materials science in France. He specialized in microstructural investigations by transmission electron microscopy. *website* : www.icmpe.cnrs.fr

Valerie Hartman-Claverie is a professional Ondist since 1973 (1973, medal Ondes Martenot at Paris Conservatoire). She is the Martenot Waves teacher at C.N.S.M.D.P. (Paris Conservatoire) since 1993 (where she succeeded Jeanne Loriod) *website* : www.cnsmdp.fr

Trimpin: Advancing Sound in Art and Instruments

Christina Orr-Cahall
EMP Museum, Seattle

Trimpin is the twenty-first century's Renaissance man – inventor, musician, engineer, composer, instrument maker, sound sculptor, computer wizard, visionary and recipient of a MacArthur “genius award.” This talk will examine the genesis behind Trimpin's work, explore several of his installations and compositions both visually and through recorded performances, and assess his role in simultaneously advancing avant-garde musical instruments, composition and art.

Born in Germany in 1951, currently living in Seattle, Trimpin had formal music training in brass and woodwinds at the University of Berlin. His work is based on his deep understanding of sound, musical instruments, computers, science and contemporary art. He prefers that his instruments employ no electronic or amplified parts, but rather build upon sounds made by traditional musical instruments, challenging what those sounds can be. Inherent in Trimpin's work is his wit, his interest in working on a large scale, and his commitment to engaging the audience. “Klompen” (1990), for example, is an instrument comprised of 120 wooden shoes suspended from the ceiling, each shoe fitted with a tiny hammer connected by computer to create percussive, melodic sounds moving around the space.

One of Trimpin's most dynamic works, “IPP 71512” (1991), is a prepared piano, an homage to Cage, where change is automated through a device suspended above the

instrument. Its lowering, raising and turning by computer allows for a range of timbres and sounds that cannot be created by human hands, as for example an 18-note chord opening a Trimpin composition. A video camera within the piano lets the listener see the sound creation.

Trimpin's instruments have been "played" in such diverse venues as the Stedelijk Museum (Amsterdam), Lincoln Center, and the Technorama Swiss Science Center. He has created instruments and compositions for Ton de Leeuw, Merce Cunningham Dance (BAM), and the Kronos Quartet. His work truly merges the musical instrument with contemporary artistic exploration. By utilizing the computer while retaining non-amplified sound, by combining "found objects" with scientific principles, Trimpin stretches our understanding of sound and performance while engaging our minds and senses.

Christina Orr-Cahall is the CEO of EMP Museum, a museum of music and popular culture, in Seattle. She received her PhD in art history from Yale University, has served as the director of the Corcoran Gallery of Art and Norton Museum of Art. She currently serves on the board of the Institute of Museum and Library Services.

Hydraulophones: Musical Instruments as Hands-on Public Art

Steve Mann and Ryan Janzen

University of Toronto

A hydraulophone is a musical instrument whose sound is produced by vibrations in liquid matter, unlike other instruments whose sound is produced by vibrating solid matter (strings or percussion) or vibrating gases (wind instruments). The hydraulophone represents the confluence of musical and visual art on two levels: (1) sculptural form as a public art installation; and (2) the aesthetic experience of playing or experiencing the instrument being played, at the nexus of acoustic and visual art. When one of the water jets is touched near the edge of a finger hole, the sound is flatter, sad and mournful, while the water arcs in a visual aesthetic of weeping, like teardrops. But when a jet is touched nearer the center, the sound is more upbeat, sharper, and quicker-responding, with more upward water flow visible in various patterns.

Wind instruments are visual art only insofar as we can see the instruments and the players, but not the medium that makes the sound (air). But hydraulophones allow us to see the medium that produces the sound. Thus a new aesthetic is born, in which the water's ebb and flow is part of the artistic experience. Additionally, if we look closely, we can even see cymatics in the water. Cymatics, from the Greek word: κύμα ("wave"), reveal the modal vibrations in water when it resonates hydraulophonically.

We have created a large variety of visual art installations with hydraulophones, ranging from sophisticated civic landmarks to whimsical playful children's sculptures. Acoustic hydraulophones – some made entirely out of wood – are being used to raise

awareness of water and forest conservation. In 2004 we responded to an international call for artists to address the broad theme of Earth, Water, Air, and Fire, for the installation of public art at an internationally acclaimed museum that is also an important landmark architecture site. As a result we built an underwater pipe organ capable of playing anything from intricate Bach fugues to classical, jazz, and modern experimental music.

With rich polyphonic expressivity, the hydraulophone creates new aesthetic possibilities in the sound, tactility and visibility of vibrating water itself, as a moving, dynamically changing sculptural form.

Steve Mann received his PhD degree from MIT in 1997, and is currently a tenured professor at University of Toronto, where he teaches and does research in the Faculty of Applied Science and Engineering, the Faculty of Arts and Sciences, and the Faculty of Forestry. His work has been shown in the Smithsonian Institute, National Museum of American History, Museum of Modern Art (New York), Stedelijk Museum (Amsterdam), Triennale di Milano, Austin Museum of Art, and San Francisco Art Institute. His inventions include the hydraulophone as well as the wearable computer, leading to his writing more than 200 books, research papers, and patents.

Ryan Janzen's compositions have been performed in New York, San Francisco, Toronto, Copenhagen and Shanghai. His work embodies a fusion between art and science that comes naturally: Janzen's scientific research has led to advances in acoustics, aerospace engineering, and electric vehicle propulsion. His music research is published in eight international music publications, and in 2006 Janzen was the world's first composer to create music for hydraulophone. After founding a technology consulting company in elementary school, Janzen has produced an array of art music, film music, performance art, and high-tech performances that push the limits of art and science.