**ABSTRACTS**

**SESSION 1 – NEW TECHNOLOGIES - WEDNESDAY 24TH FEBRUARY**

**11.15am - Photonic Patterns: Fashion Cutting With Illuminating Polymeric Optical Fibre (POF) Textiles**

**Dr. Jeanne Tan, The Institute of Textiles & Clothing, Hong Kong Polytechnic University, Hong Kong**

Contact email address: [jeanne.tan@polyu.edu.hk](mailto:jeanne.tan@polyu.edu.hk)

*Abstract:*

Creative pattern cutting with conventional textiles can often achieve a diverse variety of effects ranging from the sculptural to minimalist simplicity. Conventional textiles have few limitations and can be manipulated to adhere to the creative demands of the designer. Current research of POF textiles have resulted in the creation of a hi-tech textile which is pliable and possess high tactile quality. However, the fundamental nature of the fibres is brittle thus susceptible to breaking when abruptly bent. In addition, the textile is dependent of the continuous structure of the POF to transmit light. Using the researcher’s practice as the main case study, this paper will explore the challenges of designing and pattern cutting POF textiles to create dynamic fashions which are adaptive and serve as a sustainable and alternative platform for communication.

**11.45pm -- Shaped by a Stitch – Exploring the Knit Stitch as a Means for Shaping Pre-made Textiles**

**Linda Ohrn-McDaniel, Kent State University, Kent, Ohio, USA**

Contact email address: [lohrn@kent.edu](mailto:lohrn@kent.edu)

*Abstract:*

The history of the knit stitch is believed to date back to around 200A.D. Initially the technique evolved in direct relation to the development of the sock, an article of clothing known for few seams and close fit. Today the knit stitch serves a multitude of purposes, both as an inspiring form and as a technique and material with many advantages such as comfort, flexibility and minimized waste, the list goes on. This paper explores a group of designs created practice based study utilizing an untraditional and sustainable approach to the knit stitch starting from pre-made textiles, both knits and wovens. Some of the textiles are upcycled and some are cut with a zero-waste pattern approach. Through the design examples, which were created as a basis for the study, the focus was on the shape of the basic stitch as a prominent feature and starting point in the design. The goal was to explore how a technical component such as the stitch can be utilized both for its aesthetic value and the ability to be part of the shaping of the garment.

**12.15pm - Computational Fashion – The Digital Approach to Pattern Making**

**Kiwy Huang, London College of Fashion, University of the Arts, UK**

Contact email address: kiwyhuang@yahoo.co.uk

*Abstract:*

Despite advancing software technology, this has not significantly improved the efficiency of pattern making, whereas fabric draping simulation, catwalk presentation simulation software has been a primary focus of various software firms. This research project aims to implement an innovative digital approach to the pattern making process in fashion design. Main approach is to visualize the designed garment (combinations of front, side and back technical drawings) in a three dimensional environment then unwrap the three dimensional model to flat two dimensional pattern blocks. By utilizing software technology and implementing mathematical algorithm, this project is aiming to improve production efficiency and economic compatibility for fashion designers. This project also discusses the importance of pattern making knowledge and expertise to the fashion industry. It does not encourage the pattern making process to be entirely replaced and conducted by software.

**SESSION 2 - PEDAGOGIC - WEDNESDAY 24TH FEBRUARY**

**11.15am - Parsons New Curriculum**

**Greg Climer, Parsons School of Design, New York, NY**

Contact email address: [climerg@newschool.edu](mailto:climerg@newschool.edu)

*Abstract:* In 2013 Parsons launched a new curriculum, which has cross--‐disciplinary work, creative making and reflective practice underpinned by research at the core. The curriculum is a restructuring of the traditional Bauhaus design education. Traditional Bauhaus design education involves one foundation year followed by three years in a selected discipline. Parsons has shifted to a four--‐year structure that updates the Bauhaus model for the new challenges modern designers face. In My roles as a departmental coordinator, associate director of first year education and as a teacher I observe a shift in the way fashion students approach design challenges. This paper will compare these observations to a broader study of the Students in the “new curriculum.” This case study focuses on the how the changes in curriculum have impacted on the student experience, particularly how students approach pattern cutting and design as a symbiotic relationship. The case study uses interviews with students and faculty and a study of the internal annual curriculum assessment.

**12.45am - How Can a Box Become A Garment**

**Laura Hardingham, Robert Gordon University, Gray’s School of Art, UK**

Contact email address: [l.a.hardingham@rgu.ac.uk](mailto:l.a.hardingham@rgu.ac.uk)

*Abstract:*

This paper analyses fashion students pedagogical understanding of three dimensional pattern making and garment construction through the project How Can a Box Become a Garment, a project implemented as an alternative novel approach for students new to pattern construction in how to transform 2D material into a 3D garment creating unconventional shape and form.  Using flattened boxes as a substitute for pattern pieces and working in pairs students were briefed how there was no right or wrong response, but rather to focus on creating interesting 3D form.  Working with a minimum of two boxes cut out in calico students were encouraged to progress organically alternating between stitching random edges together and analyzing the resulting shape on a mannequin until they felt their garment was complete.  The research gathered for this paper highlights how alternative teaching approaches to creative pattern cutting can be complimentary to traditional pattern construction skills, in particular to students who find this area challenging.

**12.15pm - Jumpstarting Creativity in the University Setting: An Exercise in Creative Silhouettes**

**Prof. Susan P. Ashdown, Department of Fibre Science & Apparel Design, Cornell University, Ithaca, New York, USA**

**Dr. Fang Fang, Dr. Xiao Ping, and XiaoFengYao, Fashion Design Institute, Donghua University**

**Shanghai, China**

Contact email address: [spa4@cornell.edu](mailto:spa4@cornell.edu)

*Abstract:*

Teaching creativity to beginning apparel patternmaking students is challenging, as they lack the skills to work quickly that are necessary to develop fluency and flexibility in pattern creation, attributes essential to creative practice. Unlike quick sketches, creating garments takes time and effort. To address this issue, we conducted a one week class in creative patternmaking for 21 undergraduate students using half scale dress forms, in which students created silhouettes by pinning to the form. The use of half scale forms has been common in apparel for many years, but traditional forms do not accurately reproduce the body shape. The Alvanon dress forms used in this workshop are created from a body scan, and are scaled precisely from the corresponding full scale form. Garments created on these forms can be digitized into a CAD system, scaled up, and printed out full scale. Students designed three different models in one week, each model responding to a different challenge.  Most of the students produced increasingly creative designs. Assessment of their designs, their responses, and faculty responses indicated that they gained a better understanding of creative patternmaking. The students returned to their classes in technical patternmaking both inspired and encouraged by this experience. Several students digitized and scaled up their patterns, although this was not required, demonstrating that they felt their work was significant.

**SESSION 3 - FASHIONED - WEDNESDAY 24TH FEBRUARY**

**11.15am - Pattern Making for New Fabric Joining Technologies.**

**Elena Etheridge, Manchester Metropolitan University, UK**

Contact email address: [E.Etheridge@mmu.ac.uk](mailto:E.Etheridge@mmu.ac.uk)

*Abstract:*

Traditional garments such as the Japanese kimono are simple in construction and use few, geometric pattern pieces. Fit is achieved through wrapping, draping and tying the garment on the body. Expanding on these principles and through exploration of this approach, design ideas can be generated three-dimensionally. Alternative fabric joining methods such as bonding and welding have developed over several decades and more recently have mainly been used in sports clothing, performance wear and lingerie. These technologies have unexploited potential in fashion garments and can benefit the manufacturing process by reducing machine operations and seam components. This paper documents a design practice-based research project. Approaches to creative pattern making are explored, developed and adapted to consider new fabric joining technologies in contemporary fashion. This methodology incorporates issues of sustainability into the design and manufacturing processes and the use of innovative pattern cutting approaches create new design possibilities.

**11.45am - Myths, Mysteries and Legends that Surround the Development of Pattern Cutting**

**Hilary Hollingworth, University of Huddersfield, UK**

Contact email address: [hilary.hollingworth@hud.ac.uk](mailto:hilary.hollingworth@hud.ac.uk)

*Abstract:*

This paper explores how techniques of measurement have developed influencing approaches to pattern making through history. The research also considers how the available technologies, attitudes, cultural differences and beliefs at various points in time have contributed to the way the discipline developed. The origins of western style pattern cutting are by trial and error with individual systems being established though always not recorded. Tracking the development of measurement is a little different as it is important some that a means of recording the individual lengths is established. The relationship between measuring the body and making patterns for garments that work with the body is one that is flexible. Examining publications on the topic of pattern cutting published over the years it appears that many books on the subject are concerned with providing instruction with minimal theoretical underpinning in a way that suggests there is only one correct method - therefore creating a myth.

**12.15pm - Tacit Magic: Understanding the Principles Behind Nakamichi's Creative Pattern Cutting**

**Author: Ellen McKinney, April Elisha Stanley, Brianna Plummer, Katherine Thompson and, Whitney Rorah, Iowa State University, USA**

Contact email address: [emckinne@iastate.edu](mailto:emckinne@iastate.edu)

*Abstract:*

Tomoko Nakamichi is globally renowned for her creative pattern cutting techniques presented in the Pattern Magic books (2010, 2011, & 2012). The goal of this research inquiry was to uncover tacit knowledge in Nakamichi’s techniques. Understanding the tacit principles behind her patterns may inspire pattern cutters to create innovative techniques and designs. Researchers conducted a structured inquiry into 50 different patterns in the Pattern Magic books to create a framework of principles. Each pattern was drafted, the principles contained therein analyzed and then applied in a new garment location to test the principles’ universality. Our inquiry began with traditional block-based pattern cutting principles of Joseph-Armstrong (2010): Dart Manipulation, Added Fullness, and Contouring. In addition to creative uses of these, we found principles which we termed: Adding 3D Geometric Shapes, Creating Shape through Extensions, Extending 2D Shapes from Seams, Geometric shapes become 3D with the Body Inserted, and Versatility by Design.

**SESSION 4 – NEW TECHNOLOGIES - WEDNESDAY 24TH FEBRUARY**

**2.00pm - Measuring Access**

**Alison Rastetter Rasch, Independent Researcher**

Contact email address: alirasch@gmail.com

*Abstract:*

A proposal for the development of an inclusive digital network of sizing information based on the principles of bespoke tailoring, specifically in regards to the use of unique personal measurements and pattern blocks. ‘Inclusive’ indicates that this resource is meant to work with any type of body shape, including those that are outside conventional sizing standards for any reason. As an online database resource, this system confidentially stores and organizes measurement data used to generate personalized size profiles. Data can also be used to create personalized pattern blocks and custom designs for made-to-measure garments via the online system. By beginning with the specific needs of the end user, this clothing resource aims to offer more than what is currently available online. Access to custom clothing designs would be further improved with opportunities provided by developments in technology such as CAD/CAM pattern software, 3D body scanners, 3D printing, laser sintering, etc.

**2.30pm - Integrating Textile Design & Surface Design into the Pattern Cutting Process Incorporating the Use of Multiple Technologies.**

**Katie Thompson, Whitney Rorah and Dr. Ellen Mc Kinney, Iowa State University, USA**

Contact email address: [kthomp@iastate.edu](mailto:kthomp@iastate.edu)

*Abstract:*

Keywords: Pattern cutting, digital textile printing, laser cutting

Page (2013) found that technology enhances creative pattern cutting. This study explored the capabilities of two relatively new technologies to the fashion industry to enhance creative pattern cutting: a Mimaki-tx2 1600 digital textile printer and a Trotec Speedy 400 laser cutter. To create four garments, original pattern designs drafted in Opti-tex CAD pattern software were exported into Adobe Photoshop where textile prints and engraving designs were engineered onto them. Pattern pieces were printed directly on fabric using a textile printer. That textile was transferred to a laser cutter where the engraved surface was etched and then pattern pieces cut prior to sewing. Advantages realized by incorporating these technologies included: (a) creation of print and surface designs to specifically enhance the garment patterns, (b) high accuracy and decreased time in textile cutting, and (c) decreased used of paper. Integrating multiple technologies opened the doors to endless opportunities for creative pattern cutting.

**3.00pm - Defining a Theoretical Model - The Application of 3d Printing as a Disruptive Technology, Explored Through an Analysis of the Process of Creative Garment Development**

**Jayne Mechan, Georgina Housley, Edmund Keeefe and John Earnshaw**

**Manchester Metropolitan University, UK**

Ed Keefe, Hobs Reprographics, UK

Contact email address: [J.Mechan@mmu.ac.uk](mailto:J.Mechan@mmu.ac.uk)

*Abstract:*

With fashion brands such as Pringle and designer Iris Van Herpen utilizing the technology to create innovative garments, 3D printing in fashion is playing a pivotal role in the reinvention of both material and structural processes (Braddock Clarke & Harris, 2012).  Whilst the technology itself is not new, its use within commercial fashion is more recent where, typically the approach to design is through collaborative partnerships, reaching across other non-fashion disciplines*.* This project was initiated through the research and development of learning materials for undergraduate Fashion Design and Technology students new to this process.  The model aims to facilitate their understanding of how the technology can be applied within, across and outside of the boundaries of creative pattern cutting, including experimentation using 3D software. The factors affecting implementation of conceptual knowledge is discussed and applied to the model.  The role of 3D printing integrated within creative pattern cutting, design, product development, textile design and product modelling/engineering is explored.  The outcome of the research is the proposal of a theoretical model to inform teaching and learning.

**SESSION 5 – PEDAGOGIC - WEDNESDAY 24TH FEBRUARY**

**2.00pm - Pattern Drafting for Diverse Body Types**

**Adrian Thornton, Leeds College of Art, UK**

Contact email address: [adrian.thornton@leeds-art.ac.uk](mailto:adrian.thornton@leeds-art.ac.uk)

*Abstract:*

‘We ask educationalists why training on an immoveable bust stand who can't speak and give them guidance and feedback on what the design actually feels like, transferring the design to a model who is paid not to speak and stand to attention rather than sit and lounge, is considered to be a rounded training when there is no 'body,' involved in the process. How can students of fashion learn empathy as they are not given the opportunity to engage with the human process and consequences of their design?’ (1) This paper looks to debate how within fashion education we can address body size diversity awareness through the delivery of innovative pattern drafting courses. Through case studies of teaching pattern drafting to a diverse range of learners, developing their knowledge and practical experience through drafting for the real body, the work addresses future pathways for UK manufacturing.

1. Caryn Franklin from All Walks Beyond the Catwalk in conversation 21.1.2014

**2.30pm - Changing Perspectives in the Patternmaking and Draping Classroom**

**Linda Ohrn-McDaniel, Archana Mehta and Elizabeth Carr, Kent State University, Kent, Ohio, USA**

Contact email address: [lohrn@kent.edu](mailto:lohrn@kent.edu)

*Abstract:*

How do we best take advantage of digital tools in the patternmaking and draping classrooms? The hands on nature of these topics often make us favour traditional demonstration approaches. However, what if digital tools could help us change the student’s perspective? What if we could give the student the opportunity to experience the demonstration from the same perspective as the patternmaker/draper rather than viewing it from an opposing vantage point? Through this study we are looking at how the students understanding and success in the classes are improved through a new perspective of the demonstration. In order to obtain this new view point we have created a demonstration situation where the student is placed in the position of the expert through digital recordings placing the camera perspective from that of the instructor. The focus is to give the student the opportunity to experience the demonstration through the eyes of the expert in order to get a more realistic perspective.

**3.00pm - Scaffolding Creative Pattern Cutting throughout the Traditional Patternmaking Curriculum**

**Brianna Plummer, Framingham State University, USA**

Contact email address: [bplummer@framingham.edu](mailto:bplummer@framingham.edu)

*Abstract:*

Building on previous research focusing on the pedagogical presentation of creative alternatives to traditional patternmaking within an undergraduate fashion design program, this paper explores the potential benefits of introducing creative pattern cutting techniques earlier in the university curriculum. Today’s students may not be familiar with customary paper patterns. How much traditional patternmaking knowledge is needed to provide the foundational skills required for successful creative pattern cutting? Is it possible for the patternmaking novice to be more conceptually creative in zero-waste designs, reverse engineering, up-cycling, and Japanese-style pattern cutting even though their abilities to execute the design may not be advanced? Through a new special topics course comprised of students with various design, construction, and patternmaking skills this research investigates the creative decisions and innovative applications to propose a scaffolding framework of when to introduce and experience creative pattern cutting throughout the curriculum to enhance creativity in all aspects of design.

**3.30pm – Teaching of creative pattern making in today`s higher education**

**Karen Jessen and Lucia Mors de Castro, ESMOD Berlin, Germany**

Contact email address: [lucia.decastro@esmod.de](mailto:lucia.decastro@esmod.de)

*Abstract:*

This project aims to reflect on the teachings of todays educators in the field of creative pattern making in higher education. The research is focused primarily on the educational aspect of pattern cutting, the teaching staff, the different teaching methods used and their effectiveness. Through observation and participation, we aim to investigate and compare the different teaching methods and their effectiveness – this paper explores with specific examples how appropriate each method is in securing the desired learning outcomes. By interviewing and analyzing the educators didactic approaches, on how to teach their knowledge of the principles of pattern cutting and the further developing into an embodied design method, we aim to capture the orientations of the educators in the following fields:

1. How relevant is creative pattern cutting? In designing? In the future, in the fashion industry?
2. How to raise and maintain the motivation of the Student, of themselves?
3. Which tools and media do they use in their classes?
4. How important is the presence of a teacher? E-learning?
5. How much self-reflection is practiced?
6. How are decisions about methods taken and did they change over the last years?

The documentation of visually interesting, effective exercises and experiments will form the practical part and result in a publication, which will be a unique reference book.

**4.00pm - Toy Box or Tool Box; Is Fashion Education merely an Expensive Hobby?**

**A.Vouyouka,FTI, Telestia School of Clothing Design &Technology**

**R.Ryder-Caddy Coventry School of Art and Design, UK**

Contact email address: [anastasia@etelestia.com](mailto:anastasia@etelestia.com)

*Abstract:*

The chasm between Fashion education, and the Fashion industry is expanding: recent articles indicate that current qualifications aren’t preparing graduates for the real requirements of the Fashion industry. Historically, education and industry were both bound as one area, focused on strong pattern cutting and technical skills to drive design and progress forward. In recent years, changes in education, the high street and the fashion world have encouraged students and graduates to specialize in aesthetic areas and in many cases to abandon more technically challenging content. This study is part empirical, part explorative and considers previous enquiries in the context of how Fashion Education could better serve the needs of the industry and the student. Students, educationalists, retailers, pattern makers, designers and consumers will all be considered as we seek to open up the size and depth of the problem; is Fashion Education offering merely a proverbial toy box to students, or can graduates still leave education with a brimming toolbox ready to work?

**SESSION 6 – FASHIONED - WEDNESDAY 24TH FEBRUARY**

**2.00pm - From Roll to Bag**

**Dr. Jonas Larsson and Dr. Rickard Lindqvist, The Swedish School of Textiles, Sweden**

Contact email address: [rickard.lindqvist@hb.se](mailto:rickard.lindqvist@hb.se)

*Abstract:*

The *From Roll to Bag Horizon 2020* project aim to accelerate and support the growth of European creative fashion industries. A continuous ‘from‐roll‐to‐bag’ demonstration production line that combines existing digital printing technology, consumer driven digital ordering system, mass-customization and laser-cutting with the recently developed Kinetic Garment Construction method will be demonstrated during 2016. This merge of basic research in garment construction with digital print technologies explores and exemplifies design possibilities for an alternative production process through a number of garment prototypes. The development of such a design concept, with garments patterns in one single piece combined with for example markings being embedded in the print design, opens up for more efficient manufacturing, lower fabric consumption, enhanced functional possibilities and unseen expressional values.

**2.30pm - The White Shirt. (An Exploration into the Influence of Geometrics in Fashion**

**Gael Henry, Tony Brotheridge and Prof. Bruce Montgomery, Northumbria University, UK**

Contact email address: [bruce.montgomery@northumbria.ac.uk](mailto:bruce.montgomery@northumbria.ac.uk)

*Abstract:*

In 1871 Brown, Davis and Co of Aldermanbury registered the first shirt style, which opened all the way down the front. Keers P (1987).[1] This research explores a contemporary form of pedagogical self-expression that challenges the relationship between dress, pattern making and the body. Utilising a new method of learning and teaching, geometric shapes are used as the inspiration for a basic white shirt. Japanese Designer, Yohji Yamamoto provides inspirational words:

*“Allowing space between the garment and body is of tremendous importance... it gives the wearer the possibility of inhabiting the garment naturally, without being restricted by a predetermined form…”*

The authors worked with fashion students in 3D and 2D .The only constraints were that the shirt must contain the standard neckline with a 2-piece collar, a straight shirt placket and a cuff .The garments tell a visual narrative that questions proportion, silhouette, volume and movement, and develops tactile knowledge.

**3.00pm - “The Side Saddle Skirt”**

**Lyn Caponera, Parsons the New School for Fashion Design. New York, NY**

Contact email address: [caponerl@newschool.edu](mailto:caponerl@newschool.edu)

*Abstract:*

“Queen Victoria Reviewing Her Troops in 1837” was seen in the oil painting by Sir Edwin Landseer in 1838 wearing a jacket and side saddle skirt a top a horse. Recorded in that painting was the sport of horseback riding, formerly only for a man, and now a woman too could partake and enjoy. Though the dress has changed, the side saddle skirt still holds a mystique, more than the modesty it was intended to preserve. A solemn female rider set outside of St Paul’s Cathedral for the memorial of Prof. Louise Wilson as recently as February 2015 wearing a riding habit. The iconic riding habit was composed of a jacket (the style of which was adapted from the male coat), and a side saddle skirt. The skirt was designed to cover both legs while they were placed together and to the side while seated a top a horse, speaking to the modesty of the woman. In my presentation, I will offer the possibility that the side saddle skirt was the first “creatively cut” garment, developed at a time when information on pattern cutting was scarce. When walking, an interior pulley controlled the additional length and width that had been added to the pattern to accommodate the unusual “seated” orientation of this skirt. This amorphous silhouette remains provocative, with a pattern and history still to be studied and shared.

**SESSION 1 – NEW TECHNOLOGIES - THURSDAY 25TH FEBRUARY**

**11.15am - On the Relationship Between the Shear Forces in Human Skin and the Grain Direction of Woven Fabric**

**Dr. Rickard Lindqvist, The Swedish School of Textiles, Sweden**

Contact email address: [rickard.lindqvist@hb.se](mailto:rickard.lindqvist@hb.se)

*Abstract:*

The prevalent utilization of the grain line vertically in pattern cutting is arguably connected to the tailoring matrix, the theoretical approximation of the body that is derived from horizontal and vertical measurements of the body in an upright position. As woven fabric generally is anisotropic i.e. rigid on the straight grain and flexible on the bias this utilization lack of dynamic qualities in interaction with the moving body. Langer’s lines utilized in surgery denote the skins anisotropic qualities and is thus also a notation of the movements of the body. Through concrete experiments by cutting and draping fabrics on live models guided by Langer’s lines this research explores and defines possible congruence’s between the shear forces of human skin and the anisotropic qualities of woven fabric. Suggesting, through a number of garment prototypes, how the utilization of fabric grain may shift across the body.

**11.45am - Stretch to Fit – Made to Fit: A comparison of stretch jersey and woven apparel garment block creation, with an innovative technical experiment to increase the bust girth, by adding bust cup grading into the front body pattern.**

**Tanya Dove, Hong Kong Polytechnic, Hong Kong**

Contact email address: tanya.dove@polyu.edu.hk

*Abstract:*

It is widely recognized that elastic fibres (spandex and lycra) are used to impart stretch to fabrics. The amount the apparel *stretches to fit* depends on the elastic fibbers characteristics and recovery properties, in providing pressure comfort and ease of movement. *Made to fit*, by comparison, is the construction of 2-dimensional non-stretch pattern blocks using body darts to denote the 3D form. Building patternmaking theory can lead to a better understanding of the body to garment interaction, and the fit of apparel. This investigation commences with the identification of garment block construction methods for woven and jersey apparel, and corresponding garment fit expectations, comparing two published patternmaking methods. It proposes a system of adding bust cup grading into non-stretch garment blocks. The experimental results indicate that the proposed method would be easy to implement and could generate patterns with an improved bust girth fit. The purpose of this paper is to show that a new grading system would better serve the female population than the system currently in use. This system would also be more efficient as it would reduce the consumer time spent in fit identification as labelling would also indicate bust cup sizing.

**12.15am - 3.30pm - 3d Printing: Virtual Draping the New Moulage**

**Emma Grain, University of Huddersfield, UK**

Contact email address: emma.grain@hud.ac.uk:

*Abstract:*

This practice-based enquiry aims to examine design and manufacturing possibilities using 3D CAD and 3D printing and to systematically test a range of materials in order to establish those appropriate for 3D printing fashion. The feasibility of draping and sculpting materials virtually onto the body using Rhino (3D CAD software) will be explored. Unlike former virtual 3D modelling where a pattern could be made from the draped fabric on an avatar, this enquiry will explore whether printing the material directly from the software can eliminate the need for traditional pattern cutting in this process. Since 2012 3D printing has emerged as a new method of manufacture for clothing. This is mainly evident in experimental sculptural forms for women. Working in collaboration with 3D Systems (the founding company of 3D printing), will ensure precise and well informed results and these will be fed back through this investigation.

**SESSION 2 – SUSTAINABLE/ALTERNATIVE - THURSDAY 25TH FEBRUARY**

**11.15am - Holistic Zero-Waste Model: Beyond Pattern Cutting**

**Kirsten Schaefer, PhD Student, Yeates School of Graduate Studies | Ryerson University, USA**

Contact email address: [kirsten.schaefer@ryerson.ca](mailto:kirsten.schaefer@ryerson.ca)

*Abstract:*

Sustainability in apparel design is not simply a matter of material substitution after a functional prototype is achieved; it must be incorporated from the very conceptualization of a product. Zero Waste Pattern Cutting (ZWPC) is a pattern development method that offers designers ways of addressing the challenge of eliminating waste at the source. To be successful at this method, apparel designers must develop products that utilize every ounce of the selected materials. This would ensure that the average 15% fabric waste in traditional pattern cutting is mitigated. However, scant resources exist to guide practitioners on how to implement the ZWPC approach into their apparel design explorations. Thus, the challenge can be daunting, and may result in design compromises that do not fully benefit from a zero waste strategy. This paper provides a detailed, auto ethnographic account of my implementation of ZWPC integrated into the development of a zero waste, modular wedding gown. It is the goal of this paper to expand on the empirical and theoretical body of knowledge about the use of ZWPC so that it may become more accessible to other apparel design professionals and applied more often

**11.45am - Sizing up Zero-Waste Patterns**

**Melanie Carrico, University of North Carolina at Greensboro, USA**

Contact email address: [mrcarric@uncg.edu](mailto:mrcarric@uncg.edu)

*Abstract:*

Zero-waste fashion design (ZWFD) is a sustainable practice and creative challenge. Integration into mainstream fashion, though, requires executing the designs in multiple sizes. Recent literature has expressed these concerns but offered no solutions. Traditional pattern grading methods are unworkable in ZWFD because pattern shapes lay flush against each other with no room for expansion or contraction. Cut and sew fashion production uses standard fabric widths, and a zero-waste designer must work within those widths. Since patterns typically grade more in width than length, opportunities to expand pattern shapes are prohibited across the width of fabric in zero-waste situations. While rotating the pattern shapes would allow growth along the fabric length, what are other alternatives? This paper discusses utilizing lace insertion in ZWFD to achieve size differentiation. The garment grades (grows and shrinks) due to the varied widths and lengths of the laces used while pattern shapes remain constant.

**12.15am - Growing and Sustaining Creative Pattern Cutting as a Recognized Profession in Asia**

**Jeremiah Tan, Harah Chon and Adrian Huang, Lasalle College of the Arts, Singapore**

Contact email address: [jeremiah.tan@lasalle.edu.sg](mailto:jeremiah.tan@lasalle.edu.sg)

*Abstract:*

There has been a gradual shift in apparel production from China to parts of Southeast Asia, allowing fashion designers to leveraging lower labor costs and raw material resources during sampling and production. These cost-saving benefits have impacted the overall perception of quality, as designers frustratingly come to realize the poor levels of pattern cutting knowledge within the region. The current challenges portray the existence of a regional gap in manpower for well-trained pattern cutters to support the designers wishing to produce their collections in Southeast Asia. Pattern cutting is traditionally seen as a secondary by-product of the fashion design discipline, rather than its own professional career pathway. Against the Asian context, pattern cutting is considered to be a vocational operation that requires very little formal education. However, the introduction of Creative Pattern Cutting as a specialism within tertiary design education is beginning to challenge existing misconceptions and reshape the role of pattern cutting as an extension of fashion design. This paper aims to review the current value of highly-skilled pattern cutters in Southeast Asia through discussions of educational support and potential production capabilities within the region.

**SESSION 3 – FASHIONED - THURSDAY 25TH FEBRUARY**

**11.15am - Abstract Approaches to Creative Cutting**

**Lee Harding, Birmingham City University, Faculty of Arts, Media and Design, UK**

Contact email address: [Lee.Harding@bcu.ac.uk](mailto:Lee.Harding@bcu.ac.uk)

*Abstract:*

“I think perfection is ugly. Somewhere in the things humans make, I want to see

scars, failure, disorder, distortion.”

Yohji Yamamoto

This project evaluates the effectiveness of new creative cutting methods used with second year

undergraduate students. Historically learners are increasingly found to be lacking in confidence

with regards to three-dimensional exploration and technical realization that enables them to forge an individual design aesthetic. The study embarks on reviewing a series of workshop that focus on garment distortion, exploding and projection techniques. The practical workshops encourage learners to forge a new perspective to three-dimensional thinking and understanding, not traditionally found through conventional flat pattern cutting methods. The research will reflect upon case studies and practical sessions that build the confidence of the learner by offering different and dynamic new approaches and to foster a new relationship with three-dimensional design. The key focus of the workshops is the breaking down of pre-established concepts and boundaries surrounding dress, thus challenging students to form a new aesthetic. Through the project I hope to ascertain if the sessions have a lasting impact of the learning experience of the undergraduate design student.

**11.45am - ‘Cuts and Construction: Challenging Perceptions of 19th Century Women’s Costume**

Phionna Fitzgerald, Bradford College, UK

Contact email address: [p.fitzgerald@bradfordcollege.ac.uk](mailto:p.fitzgerald@bradfordcollege.ac.uk)

*Abstract:*

This research investigates the progress of the making of 19th century women’s costume through the cut and construction of garments held within an archive. There is a lot of research on the history of women’s fashions in this period although this is mostly based around visual references or design features and there is little focus on manufacturing. The few studies that discuss the history of construction and pattern-cutting methods are inclined to focus on 20th century techniques. The aim of this investigation was to explore and question the progression of construction methods and processes in women’s clothing throughout the 19th Century. The methods used for this research started with the documentation of over 30 pieces of costume held within Bankfield Museum’s collections, followed with experimentation of construction techniques and reconstruction of four pieces. This was further corroborated through interviews with costume/textile curators and reviewing existing literature. The investigations found a significant amount of progression within all aspects of manufacturing although these changes were mainly within the latter part of the century.

**12.15pm - From Skip to Catwalk: An Investigation into Viable Pattern Cutting Techniques for Recycled Clothing**

**Dr. Karen Shah, University of Huddersfield, UK**

Contact email address: [karen.shah@hud.ac.uk](mailto:karen.shah@hud.ac.uk)

*Abstract:*

The utilization of discarded and so-called ‘waste’ textiles in the construction of garments is nothing new. Typically it has done, amongst other reasons, out of necessity, preference and a sense of caring for the environment. Methods for extracting these textiles and transforming them into new garments in the name of reconstruction, recycling, up-cycling etc. vary but at their core is often a deviation from traditional block pattern cutting to something that resembles a bricolage of techniques ranging from moulage, fabric manipulation and a repositioning of the garments around the body often using key design details of the original garments. This paper, drawing on some 20 years of recycling clothes, proposes a number of reconstruction techniques of both clothing and textiles that have the potential to be up-scaled for relevance to mass production techniques. It is hoped that this investigation will generate debate into both the aesthetic of recycled clothes and also the potential for techniques of reconstruction to become more mainstream and accessible to a wider demographic.

**SESSION 4 – NEW TECHNOLOGIES - THURSDAY 25TH FEBRUARY**

**2.00pm - New Approach to the Dress Forms for Korean boys aged 7-10 by Body Size and Shape Analysis**

**Hye Won Lim and Prof. Tom Cassidy, University of Leeds, UK,**

**Dr.Tracy Cassidy, University of Huddersfield, UK**

Contact email address: [sd10hwl@leeds.ac.uk](mailto:sd10hwl@leeds.ac.uk)

Abstract:

A dress form is an essential tool in the clothing making process used for pattern block development, draping, and quality inspection. Most clothing manufacturing companies have spent unnecessary time to adjust dress form for solving fit suitability problems. Much of the researches undertaken thus far tend to only focus on body type analysis and more accurate representation using new technology to create enhanced dress forms. This study is aimed at suggestion of the optimized dress form for Korean Female in 2-30s. To accomplish this aim, this research provides interviews of pattern makers to determine their satisfaction and expectation of dress forms and the results of interviews are analyzed using content analysis method. In addition, body size and shape of targeted age group are analyzed statistically and ideal body shape with aesthetic perception are considered. Finally, the researcher’s dress form is developed after their body size and shape analysis with adjusting industries’ requirements.

**2.30pm - The Influence of Seams on Body Posture**

**Dr. Ines Simoes, Nuno Pinto Nogueira, Portugal**

Contact email address: [ines.sa.simoes@gmail.com](mailto:ines.sa.simoes@gmail.com)

*Abstract:*

In The Tailor's Philosophical Transfer, Thomas Oliver (1849) stated that a tailor’s primary job is to improve, when necessary, the appearance of the body by “filling up deficiencies, hiding monstrosities, and giving [it] a contour of elegance.” Based on this precept and knowing that the body, dressed or undressed, is a system that always seeks its own balance, eight shirt patterns were created with torsions and angles of seams different from the usual ones, as a method to investigate their influence on the posture of the body. Two participants wore a control shirt plus the distorted ones for a few hours to analyse their postural adjustment with the garments. Research tools like visual somatometry and interviews were used to obtain quantitative and qualitative data before and after wear. After the results were outlined, experts in the area of physiotherapy were invited to contribute for the validation of this research project.

**3.00pm - Proportional Myths and Individual Truths in Pattern Construction Methods.**

**Simeon Gill, Lecturer, The University of Manchester, UK**

**Ellen McKinney, Iowa State University, USA**

Contact email address: [simeon.gill@manchester.ac.uk](mailto:simeon.gill@manchester.ac.uk)

[emckinne@iastate.edu](mailto:emckinne@iastate.edu)

*Abstract:*

Proportional rules in pattern construction are not well documented, though they directly influence the resulting pattern shape. Historically, many measurements were difficult to determine using existing equipment. Therefore, based on experience, individual practitioners created and adopted proportional rules. In some cases these were guided by eight head theory, which influences considerations of the human form in western culture. Developing tools, like body scanning, provide opportunities to capture new data from populations and to create pattern construction methods with less reliance on proportional rules. This research explores proportional rules within existing pattern construction methods and contrasts these with dimensions established from populations using body scanning methods. Proposals are made for incorporating individual measurements defined through scanning to replace proportional rules within current methods of pattern construction. These methods build toward the creation of more individual blocks in the true realisation of made to measure garments recognising individual form, proportions and dimensions.

**SESSION 5 – SUSTAINABLE/ALTERNATIVE - THURSDAY 25TH FEBRUARY**

**2.00pm - Transforming the Sequential Process of Fashion Production: Where Zero-Waste Pattern Cutting Takes the Lead in Creative Design**

**Dr. Alana M James, Bruce Munro Roberts and Anna Kuznia, School of Textiles and Design, Heriot-Watt University, UK**

Contact email address: [A.James@hw.ac.uk](mailto:A.James@hw.ac.uk)

*Abstract:*

This paper pushes the boundaries of what is commonly perceived regarding the traditional fashion production process. When producing garments utilizing zero-waste pattern cutting methods, it can be seen that the design and make process has to be transformed in order to create garment designs, both desirable and achievable. Through a series of experimentation, data has demonstrated that it is the pattern cutting process that ultimately dictates the garment aesthetic. Moving interchangeably between the stages of the process results in flexibility between pattern creation and design. When applied, this transformation will encourage closer collaboration and parity between the roles of the designer and the pattern cutter. Zero waste pattern cutting, often closely associated with sustainability, has the potential to spark creative collaboration in the design team, resulting in a commercially viable production model for the fashion industry.

**2.30pm - Transforming Zero**

**Melanie Carrico, University of North Carolina at Greensboro, USA**

Contact email address: [mrcarric@uncg.edu](mailto:mrcarric@uncg.edu)

*Abstract:*

Zero-waste pattern cutting has yet to become a common practice in mainstream fashion. One reason is the significant amount of time needed to design and develop the pattern for a no-waste garment. Ready-to-wear fashion manufacturers often cannot afford the luxury of devoting enough time and energy to realize a complete collection of zero-waste designs. With this in mind, the author considered efficient ways that one zero-waste pattern might yield several style variations. In mass production, it is common to generate different styles from a basic silhouette thus capitalizing on the labour devoted to the initial pattern development. One such way of realizing several different looks from one original pattern is through transformational reconstruction, the method popularized by Shingo Sato of drawing new style lines on an existing silhouette. The author will share her experiences applying the transformational reconstruction technique to existing zero waste designs to generate new styles.

**3.00pm MakeUse: Print as Encoded Way Finding a System for the Creation of Garment Form**

**Holly McQuillan, Massey University, College of Creative Arts, Wellington, New Zealand**

Contact email address: [H.L.McQuillan@massey.ac.nz](mailto:H.L.McQuillan@massey.ac.nz)

*Abstract:*

This paper discusses MakeUse, a multi-disciplinary research project exploring ‘User Modifiable Zero Waste Fashion’. In particular, it addresses the use of color, line and pattern to facilitate the cognitive and creative processes involved in the transformation from two-dimensional to three-dimensional form. The MakeUse project center’s around the development and testing of an embedded navigational system by which users can formulate a functional understanding of the form and construction of a garment and its opportunities for manipulation. It questions how the encoding of navigational clues and markers into a garment might aid in its facility for creation and modification by the user, thereby enhancing emotional investment and connection, and extending its functional life. This paper specifically explores the interplay between textile mark making and garment form creation. It outlines the advantages this symbiotic relationship can have for the facilitation of understanding and risk taking in the context of collaborative textile and zero waste fashion design.

**SESSION 6 – FASHIONED - THURSDAY 25TH FEBRUARY**

**2.00pm - Creative Cutting for Underarm Fit: An Analysis of Vintage Clothing to Advise Tacit Knowledge and the Making Process**

**Helen Burbidge, School of Design, De Montfort University, UK**

Contact email address: [hburbidge@dmu.ac.uk](mailto:hburbidge@dmu.ac.uk)

*Abstract:*

The study of vintage clothing was used as a legitimate form of research enquiry to reveal pattern-cutting techniques that could not be found in published literature. The aim was to discover how to cut a close fitting underarm for a sleeve that is cut as part of the main bodice of a garment. Options for achieving this through shaping with gussets, seaming and panels was found from a range of designer, high street and unlabelled vintage pieces. These garments were not tested because of fragility and body shape differences, so replica pieces were made and tested. The making process was integral to the validity of the research, as the garments had to be worn to reveal how well they performed and what techniques offered the greatest arm mobility. The findings reveal crucial considerations for pattern cutting sleeves and fitting the underarm and will be beneficial to pattern cutters, fashion designers and those in education.

**2.30pm -** **Making Trans---form---ative Cuts Fashioning Dynamic Form: Experimental Making to Evolve Design Practice**

**Donna Sgro, University of Technology Sydney**

Contact email address: [Donna.Sgro@uts.edu.au](mailto:Donna.Sgro@uts.edu.au)

*Abstract:*

This paper introduces a fashion design approach initiated in the author’s current practice-led doctoral research. The research explores the concept of metamorphosis to transform the design process. This has involved exploring the idea of dynamic form as a method of fashioning garments. This approach questions the separation of form and material encountered when design, pattern cutting and making are considered independently. Exploring dynamic form is a risky activity that implicates taking time, slowing processes of making by integrating critical thinking and reflection; slowed fashion. It involves exploring opportunities for change by responding to material and visual properties, with a mix of intention and curiosity, the outcomes of which are improvisational. What these explorations might lead to one cannot exactly predict, however, this type of experimentation as a process can benefit from documentation and dissemination, to understand the ways in which research led by making for fashion design is possible.

**3.00pm – The Progress of Creative Pattern Cutting**

**Dr. Kevin Almond and Dr. Jess Power, University of Huddersfield**

Contact email address: [kevin.almond@hud.ac.uk](mailto:kevin.almond@hud.ac.uk)

*Abstract:*

This paper documents the journey of several research initiatives, which focused upon creative pattern cutting. Instigated by a peer-reviewed, journal paper entitled, ‘Insufficient Allure: The Luxurious Art and Cost of Creative Pattern Cutting’ (Almond, 2010), the endeavors attempted to elevate concepts of tacit knowledge and the making process as a form of legitimate, academic enquiry. The projects culminated in the first peer-reviewed conference dedicated to the discipline: ‘The First International Symposium for Creative Pattern Cutting’, held at University of Huddersfield in the UK, in February 2013. To trace the impact of the research initiatives, we consider how the skills of the pattern cutter, clothe the body with a myriad of shapes and silhouettes. We discuss this in relation to the different pattern cutting techniques that can be utilized to realize three-dimensional form and ways in which the research enterprises have arguably elevated the professional position of the cutter in terms of esteem and remuneration. In order to assess the impact of these initiatives, both within the fashion industry and in the emerging arena of fashion research, we identify some of the different research approaches utilized in practice-based enquiry and how results can be arrived at from hands-on experience, inspiring us to develop new ways to pattern cut.