Contemporary Music Festival 2019
MULTIVERSE

Gala Concert with BBC Singers
Saturday 23 February 2019
The House, University of Plymouth
THE UNIVERSITY OF PLYMOUTH ARTS INSTITUTE AND INTERDISCIPLINARY CENTRE FOR COMPUTER MUSIC RESEARCH PRESENT:

Lampedusa, an Opera in 3 Acts by Eduardo R. Miranda
With Choral Works by Linas Baltas and Marcelo Gimenes

PROGRAMME

Illusions (Choir) by Linas Baltas
Forking Paths (Choir) by Marcelo Gimenes
Lampedusa (Opera in three acts. Choir, Mezzo-soprano, Baritone and Electronics) by Eduardo R. Miranda

MULTIVERSE

Welcome to the 14th edition of the annual Contemporary Music Festival, which celebrates the internationally renowned research combining music, Quantum Physics and the life sciences developed at the University of Plymouth’s Interdisciplinary Centre for Computer Music Research (ICCMR). MULTIVERSE is the theme of this year’s festival edition and proposes a weekend of musical interpretations of the quantum world.

Running over the weekend of Friday 22 to Sunday 24 February, the festival is organised by the University of Plymouth Arts Institute in partnership with ICCMR. ICCMR’s mission is to gain a better understanding of human biology and cognition from a musical perspective, and use this understanding to improve people’s lives. We are developing neuro-technology to control musical systems using brain signals, harnessing living organisms to build novel bio-electronic devices, building interactive intelligent systems for musical creativity and investigating how new types of computers may impact on the future of the music industry.

For more information:

www.plymouth.ac.uk/contemporary-music-festival
Lampedusa is the Island of Shakespeare’s *The Tempest*. Action takes place before *The Tempest*, prior to the arrival of Prospero and Miranda, sometime by the end of the 16th century or beginning of the 17th. But notion of time is fluid. It could have taken place anytime. Even today.

Lampedusa is a mysterious island, inhabited by invisible musical creatures. It is a no-go place. It is believed that the islands’ music could drive people mad. Legend tells that Sirens learn their craft there (In Greek mythology Sirens are dangerous creatures, who lured nearby sailors with their enchanting music and singing voices to shipwreck on the rocky coast of their island.)

Sycorax is a Sephardic Jew who took refuge in Algeria from the persecutions of the Spanish Inquisition in Catalonia. She settled in the city of Oran. Oran is subsequently captured by Spain in a military campaign. The Spanish Queen Maria of Austria ordered the conversion to Catholicism of all Jews and Muslims of Oran, or face persecution and the Inquisition.

Sycorax has a love affair with Benedetto, the visiting Archbishop of Milan, and becomes pregnant. Benedetto denies the relationship and accuses Sycorax of witchcraft for having seduced him. He denounces her to the Inquisition. The Inquisition tribunal establishes, maliciously, that the father of Sycorax’s child is the Devil. She is condemned to be burned at the stake.

Mustapha, a merchant and sailor, took pity on Sycorax. He helps her to escape from the inquisitors and takes her on board of his ship bound to Venice.

A storm wrecks the ship near Lampedusa. There has been no news of survivors. But the waves tossed Sycorax to the shores of the island.
SYNOPSIS

ACT 1
Sycorax wakes up to the sounds of Lampedusa. She is mystified by the ubiquitous music in the island. She sings along.

Her singing charms an invisible musical inhabitant of the island: Ariel. Ariel approaches her. It speaks Vōv, a mythical language. Sycorax is disoriented by Ariel’s disembodied voice. She is surprised by her ability to speak Vōv.

Because of Sycorax’s exquisite singing, Ariel wonders if she came to Lampedusa to become a Siren. It asks her if that is true. She does not deny it. But does not confirm either. She has amnesia and does not fully remember what had happened to her.

Ariel ends up assuming that she did come to Lampedusa to become a Siren and facilitates her access to the secrets of musical wizardry. As time passes she remembers what happened to her and fully embraces the idea of becoming a Siren. She imagines a canny plan to take vengeance on the Catholic inquisitors.

In the meantime, Sycorax gives birth to Caliban. Time passes...

ACT 2
Caliban is a teenager. He is oblivious to the spirits. He is intrigued that his mother is obsessed with singing and talks to invisible creatures. Caliban is not a musical person.

Sycorax finally learns all it takes to become a Siren. She is ready to use her magic musical powers.

Sycorax reveals her desire to take vengeance on her assailants. She tells Caliban of her plans to lure European sailors to shipwreck on the rocky and often stormy coast of the island.

Ambitious Caliban dreams about shipwreck treasures, slaves, subjects to rule and reigning over Lampedusa.

ACT 3
The native musical inhabitants are afraid of being invaded by hordes of shipwrecked aliens. They are concerned about Caliban’s ambition to rule Lampedusa.

Ariel confronts Sycorax and attempts to nullify her magical powers but fails to do so. She successfully casts a spell to imprison Ariel inside a hollow pine tree and departs.

Time passes... No shipwrecks. Caliban wonders: has his mother died? Has she abandoned him? Or perhaps Ariel was able to nullify her magic powers after all?

But one day, he spotted a man and a girl arriving in the island: Prospero and his young daughter Miranda.
LIBRETTO

VÖV

ACT 1

Choir
Ér gigîmvā hîr mi.
Ial slō.
Ial svā.
Lā. Ō. Rē. Lō.
Qas. Sok. Bǝr. Gok.
Mā hūl. Mā aur.
Mā hak.
Qētlō mvā.
Lailō mvā.

ENGLISH TRANSLATION

All your desires are here.
Find us.
Find you.
Sun. Sea. Earth. We.
Time is born. Time dies.
Time is blind.
We speak to you.
We sing for you.

Aria: Sycorax
Lai.
Sok.
Ō.
Mi.
Lai…

Sik rē mem?
Sik kai lī?
Sik lai nhum?
Has tem gisī…

Sing.
Hurt.
Sea.
Here.
Sing…

What is this land?
What sweet voice?
Who sings to me?
The air is full of sound…

Choir
Qas. Sok. Bǝr. Gok.
Lailō mvā.
Vā.
Lā. Ō. Rē. Lō.
Lailō mvā.
Qas. Sok. Bǝr. Gok.
Ial slō.
Ial svā.
Sik rē mem?
Qētlō mvā.
Sok. Ō. Mi. Lai…
Sik kai lī?
Qas. Sok. Bǝr. Gok.
Ial slō.
svā
Sok. Bǝr.
Mi. Lai.

We sing for you.
You.
Sun. Sea. Earth. We.
We sing for you.
Find us.
Find you.
What is this land?
We speak to you.
Hurt. Sea. Here. Sing…
What sweet voice?
Find us.
you
Hurt. Hunger.
Here. Sing.
**Duet: Sycorax and Ariel**

* Ariel approaches Sycorax, unseen, and addresses her:

Dīs sik mem?  What child is this?
Tik girē kōl  Few from the Dry Lands
Gīmial rǝsqen. Seek these shores.
Mas gibōl!  Speak truly!

**Sycorax responds:**

Ginah sik masum?  How is it I speak?
Sik letmem  What is this tongue
Ullum vēm?  I do not know?
Ī silqorum… Yet I understand…
Ī masum… Yet I speak…

**Ariel responds:**

Ī laivā!  Yet you sing!
Līlue,  Sweet one,
Gitvaur nhūl  Did you come to be
Ndāluǝ ginōv?  A Deep Caller?

**Sycorax responds, confused:**

Ullum sak…  I don’t remember…
Istō…  A ship…
Askin…  A storm…
Ō tem gikinsok…  An ocean of violence…
Vik ginōk vudrē…  A light in the fog…

**Ariel responds:**

Ī gitvā gīm vdak!  Yet you arrive with purpose!
Kaivā, kaili…  Your voice, sweet voice…
Gitvaur ndā,  Did you not come
Ulva?  To join the Call?

**Sycorax, not committing:**

Gīm vdak…?  With purpose…?
Ariel explains:

Lō vik gilai,
Lō as gisai.
Kinīk svā mvēm nanahloi!

Sycorax, grateful:

Silmaur sǝsǝr, hīnimik.
Nanah sik qen...?

ACT 2

Choir

Sī mem,
bullua!
Lai gimuh.
Muh vōv.
Rǝs mem ērum?
Sī mem.
Muh vōv.

Aria: Caliban

Gisik e giłue sik e ginah sik?
Sī mem,
Lai gimuh—
Ulaur!
Muh mas, muh lai,
Ndrahul! Ndũũl!
Muh vōv
Sīũl.
Mem ēr?
Rǝs mem ērum?
Kinīk sum mbau srē kōl!
Kinīk sum mbau slũrvā, bullua!
Kinīk sum mbau sēs!

Duet: Sycorax and Caliban

Sycorax approaches Caliban:

Sil, dĩsum.
Sīlbuemuaur givism gilai,
Gis gisai,
Nanah gidā gīnōv.

We are the Lights of Song,
The Winds of the Dance.
We will teach you our ways!

I am happy to know you.
What ways are these...?

This noise,
devil!
Mother’s song.
Mother loves.
Is this shore my everything?
This noise.
Mother loves.

What and who and how?
This noise,
Mother’s song—
Constant!
Mother talks, mother sings,
To nothing! To no one!
Mother loves
No one.
Is this all?
Is this shore my everything?
Show me the Dry Lands!
Show me your body, devil!
Show me more!

Listen, my child.
I have learned from the Lights of Song,
From the Winds of the Dance,
The ways of the Call of the Deep.
Caliban queries Sycorax:
Naur ginah sik?

Sycorax explains:


For what purpose?

In a time before time, Your mother was hurt By the desires Of men. They of the twisted tree Are devils above all others. Now they will hear my Call And they will come.

I go now to the Deep, And there I will call them. And they will come. I will call them to the rocks here, Great and solid, And destroy them and their Twisted tree. And they will die. All but one. A woman for you. And you will be. From now to then and then.

Caliban exults, missing, perhaps, the finer points:
Ūnum, tōn gitūv! E mor srarah girē köl! Ėr nhum! Vrā kinimik slulūr Naur ginahum... Ėr bauīk!

I avow, they will come! They will bring things from the Dry Lands! All mine! And I will use their bodies For my purposes... All will see!

Choir

I have learned from the Lights of Song,
Sea.
Your mother was hurt
Of men.
For what purpose?
Now they will hear my Call.
Sing.
Hurt.
Sea.
Here.
Sing…
And they will come.
All will see!

ACT 3

Choir
Mem ulīk nah.
Mem ulīk nah.

This is not the way.
This is not the way.

A Deep Caller returns
To the Dry Lands to call;
This land is not her home.
A Caller here
Will bring
Outsiders.
This land will be destroyed.

Mem ulīk nah.
Mem ulīk nah.

Mem ulīk nah.
Mem ulīk nah.

Mem ulīk nah.
Mem ulīk nah.

This is not the way.
This is not the way.

The boy is not good.
His heart has no music.
He seeks to make this land
A land for him and him alone.
The vile boy
Will use
The outsiders.
This land will be destroyed.

Mem ulīk nah.
Mem ulīk nah.

Mem ulīk nah.
Mem ulīk nah.

Mem ulīk nah.
Mem ulīk nah.

This is not the way.
This is not the way.
**Duet: Sycorax and Ariel**

* Ariel approaches Sycorax: 

A dīs kai lī,  
Qālvaik srē mem.  
Bemimik bil slaivā  
E abmūv—  

Sycorax interrupts Ariel angrily:  

Bemsīk srahul!  
Lai mem nhum!  

Ariel, defensively:  

Ouhlūv!  

Sycorax, casting a spell in defiance:  

Bil is mem lok abūv svā!  

Ariel, succumbing to the tree’s tendrils:  

Bullue!  

Sycorax, one final time to Caliban:  

Bil tahmūv gimi, dīsum.  
Ī kinimik sdak qor mvā.  
Sil slai gihum vas!  
Ohvauv,  
Gibil ndrā e ndrā!  

* Aria: Caliban  

As ul lā mem.  
Rarah ul girē kōł  
Lai ul.  
Mem ul mem lai tahūv gihum…  
Git lā, git lū,  
Git lū…  
Lai gihum:  
Auraur?  
Mem ēr?  
As ul.  
Lai ul.  
Vōv…ul?  

O child with the sweet voice,  
You will destroy this land.  
We must take your songs  
And save—  

You will take nothing!  
These songs are mine!  

We will be!  

Let this tree coil around you!  

Devil!  

I must go, my child.  
Yet will I send you a woman.  
Hear my song on the wind!  
You will be,  
From now to then and then!  

No wind this day.  
No things from the Dry Lands.  
No music.  
Perhaps her songs are gone…  
Come the sun, come the moon,  
Come the sun, come the moon…  
My mother’s song:  
Is it dead?  
Is this all?  
No wind.  
No song.  
No…love?
THE LANGUAGE VÕV

New music for voice is often composed in an existing language such as English, German or Italian. But in Lampedusa the language of the sung text is created from scratch. This adds another dimension to the creative process: a dimension that has hardly ever been explored in opera before.

Võv is an artificial language created by David J. Peterson especially for Lampedusa. It is a realistic working language in the same way that Esperanto is. The meaning of the word ‘võv’ in Võv is ‘love’ in English.

Võv is the mythical language spoken in Lampedusa. Lampedusa is an imaginary place inhabited by legendary musical creatures. This is not the real Lampedusa island in the Mediterranean Sea. But it could well be. The Universe we live in may not be the only one out there. It might be one of an infinite number of Universes making up a Multiverse. Thus, the Lampedusa of this opera could be one of an infinite number of other Lampedusas. It could be the one with beautiful beaches for wealthy tourists. Or the one with squalid detention camps for despairing refugees.

The idea of composing an opera with a libretto in an artificial language emerged in April 2016, when Miranda met Peterson at the EG 10 conference in Carmel-by-the-Sea, California. In only three months Peterson prepared a work-in-progress version of Võv. And he wrote the lyrics for an experimental musical composition by Miranda entitled Võv. The premiere of Võv took place in February 2017 at the Peninsula Arts Contemporary Music Festival: Voice 2.0. Peterson continued developing the language ever since. In the meantime, Miranda developed the story and the musical research for the opera.
THE MANY-MUSICS OF PARTICLE COLLISIONS

Our intuition about how the world works breaks down when we try to understand it on the very tiny scale of the atom. In Quantum Physics particles pop up out of nowhere. They can be in two places at once and influence each other at vastly long distances.

We are made of colossal agglomerations of quantum particles. Yet we can’t do any of those weird things that particles do.

Humankind struggles to understand how Quantum Physics relates to our daily reality. There are various interpretations of the quantum world. For instance, the many-worlds interpretation advocates the existence of parallel universes.

As a matter of fact, writers and composers are very familiar with the notion of many-worlds. After all, their job is to create parallel universes. Novels, poetries and symphonies can take us to many imaginary places and abstract worlds. *Lampedusa* is no exception.

*Lampedusa* brings out an unprecedented music composition method. Besides using a libretto written in an otherworldly language, the composition draws on one of the most powerful means available to study the origins of the Universe in which we live: subatomic particle collisions.

A research award by Santander Universities enabled Miranda to take a short research residency in the Spring of 2017 at MIT Media Lab in Cambridge, Massachusetts. At MIT he developed the blueprint for a system that converts particle collision data into music. He worked with data generated by ATLAS, one of CERN’s Large Hadron Collider (LHC) detectors.

CERN is the European Organization for Nuclear Research based in Geneva. CERN built ATLAS to search for new physics such as the Higgs boson or dark matter. The ATLAS detector is shaped like a cylinder, 46 meters long with a diameter of 25 meters. It weighs approximately 7,000 tons and is located in a cavern 100 meters under the ground (Figure 1).
The device works by making very high-energy particles collide. The collisions take place at the centre of the ATLAS detector. Each collision generates several thousand subatomic particles that scatter in all directions (Figure 2). These are some of the tiniest yet most energetic particles ever created on Earth. Arguably, each of these collisions is comparable to the so-called Big Bang that gave birth to our Universe.

Upon returning from MIT, Miranda teamed up with ICCMR intern, Badrinarayanan Ram Mohan, to implement his system. They built software to render ATLAS collision data as sequences of synthesized sounds and musical notes. Miranda used the system to generate all passages of Lampedusa that are heard on computerised rendering of orchestral musical instruments (e.g., flute, clarinet, saxophone, bassoon, etc.). And most of the piece’s synthesized sound effects as well. Moreover, the software also produced soli for Sycorax’s duets with Ariel in acts 1 and 3, and for Caliban’s aria in act 2. An example is shown in Figure 3.
ATLAS employs several hundred thousand sensors of various types. They measure properties of passing subatomic debris, such as energy and trajectory. For instance, a type sensor referred to as Hadronic End-cap Calorimeters (HEC) is employed to detect electromagnetic particles, such as protons and neutrons. HEC measure the energy of detected particles.

Figure 4 shows a graph with data from one single collision detected by one of the HEC units. In this example it detected 25 particles. These are represented as black dots on the graph. The vertical bars represent their respective energy levels. The higher the energy, the taller the bar. For instance, whereas the energy of particle 1 is equal to 0.5, the energy for particle 14 is 1. In truth, energy is measured in terms of billions of electron-volts. The measurements here were scaled to a generic value between 0.0 and 2.5.
Figure 4. In this example, HEC detected 25 particles, represented at black dots. The higher the dot on the graph, the higher the energy of the respective particle.

Miranda created the Sycorax passage shown in Figure 3 using the data shown in Figure 4. Notice that the trajectory of the zigzagged dashed line on the plot is comparable with the form of the passage: the note sequences go up and down in a zigzag course. First, the system creates the dashed line joining the particles. The line then forms a melodic template, which the system uses to generate a musical sequence. The rhythm is also generated from particle collision information.

Miranda composed the part with data from a specific HEC unit, generated by one of the many collisions. There were millions of other options available. Had the composer used data from another HEC, Sycorax would have sounded different here.

We thank Juliana Cherston and Joseph Paradiso their support and advice during Professor Miranda’s research residency at MIT Media Lab. We are also thankful to Steven Goldfarb, a CERN investigator from the University of Melbourne, for sharing his knowledge on ATLAS. The ATLAS data used in this project was provided by MIT Media Lab with consent from CERN.
Instead of overtures or interludes, the festival commissioned two ICCMR composers, Linas Baltas and Marcelo Gimenes, to write musical companions to *Lampedusa*. To begin with, neither of them were told about the opera. They were asked only to respond to the theme of the festival: MULTIVERSE.

Both composers produced pieces that are remarkably connected to *Lampedusa*. They offer a complementary perspective to matters such as otherworldly realities and fragility of humanity.

Neuroscience tells us that our perception of reality are constructions of the brain. Sounds are fabrications of our mind and music is an illusion. Baltas’ *Illusions* explores the intriguing notion that our brain can listen to sonic properties that seem to pop up from nowhere. Yet, these properties do not show up when we analyse recordings of the actual sounds.

Baltas is inspired by the work of renowned cognitive psychologist Diana Deutsch. Deutsch has unveiled a number of puzzling phenomena concerning to how people perceive music. Her experiments demonstrate how listeners can differ strikingly in the way they hear musical patterns. And these disagreements do not reflect variations in musical ability or training. Even the finest musicians can disagree as to whether a tone is being played to their right ear or to their left.

*Forking Paths* is a musical response to the question as to whether parallel universes exist. Gimenes’s piece is inspired by Jorge Luis Borges’ short story *The Garden of Forking Paths*. This story evokes the idea of co-existing realities. Borges alludes to yet another fabrication of our brain: the notion of time. When we confront different courses of action in our life we often have to choose one and drop others. If we could get rid of time, would we be able to take all courses at once? With *Forking Paths* the composer comes to terms with the fact that we cannot escape time. But with a maze of bifurcating and converging voices, Gimenes is able to play with it in beautiful ways.
THE AUTHORS AND PERFORMERS

The BBC Singers hold a unique position in British musical life. The choir’s virtuosity sees it performing everything from Byrd to Birtwistle, Tallis to Takemitsu. Its expertise in contemporary music has brought about creative relationships with major musical figures of the 20th and 21st centuries, including Britten, Maxwell Davies, Poulenc and Judith Weir, Associate Composer of the BBC Singers and Master of the Queen’s Music.

The 2018-19 season sees Sofi Jeannin enjoy her first full season as Chief Conductor and the group begins a new concert series at Cutty Sark in Greenwich alongside its annual season of concerts in Milton Court Concert Hall in London. The choir also gives free performances at St Paul’s Knightsbridge and other venues, as well as regularly appearing at major festivals across the UK and beyond, including the BBC Proms each year, with the vast majority of its performances broadcast on BBC Radio 3. The world-class ensemble is committed to sharing its enthusiasm and creative expertise through a nationwide outreach programme.
Conductor Nicholas Chalmers is the artistic director of the award winning Nevill Holt Opera, conductor with Northern Ireland Opera and a founding artistic director of Second Movement. With his long-term collaborator, the director Oliver Mears, he has created over 20 productions and has been at the forefront of promoting young singers and contemporary music. The Rough for Opera series produced by Second Movement at the Cockpit Theatre, has commissioned and showcased over 40 composers and librettists over the last 5 years. Chalmers studied music at Oxford University and conducting at the Piacenza and Milan Conservatories. He was on the music staff at English National Opera from 2008 to 2011. Conducting engagements include The Magic Flute, La Boheme, The Flying Dutchman, Macbeth, Salome, Don Giovanni, Cosi fan tutte and Tosca (Best Opera - Irish Times Theatre Awards).

Edward Price has been a baritone in the BBC Singers since 2001. He appears throughout the UK as a soloist and has given numerous world premieres including Carl Rütti’s Requiem which he recorded with the Bach Choir and David Hill. Price also takes a keen role in education and outreach work and is passionate about sharing his love of singing.
EMMA TRING

Soprano Emma Tring studied Music at the University of Bristol. Tring joined the BBC Singers in 2008 as one of their full-time sopranos and appears regularly as a soloist in their concerts and recordings. She is also a member of vocal group EXAUDI. Tring is a keen recitalist and recently formed Alexandra Ensemble with her violinist husband Robin Martin. Their debut recital explored British contemporary music including a premiere for voice and violin by Andrew Toovey.

HAYLEY BENTLEY

Dancer Hayley Bentley is currently in her final year at Plymouth Conservatoire, University of Plymouth, studying for a BA in Dance Theatre. She has performed in ensemble and solo choreographies at The House and Barbican Theatre, Plymouth. Bentley has taken part in workshops by James Wilton, Boy Blue, Hofesh Shechter, Avant Garde, Alvin Ailey Dance Theatre, Charlotte Vincent and Salzburg Experimental Academy of Dance.
Composer Eduardo Reck Miranda is a Professor in Computer Music at University of Plymouth, where he leads the celebrated Interdisciplinary Centre for Computer Music Research (ICCMR). A classically trained composer and Artificial Intelligence scientist with an early involvement in electroacoustic and avant-garde pop music, Miranda’s distinctive work is informed by his unique background. He studied for degrees in music and computing in Brazil, and Music Technology at the University of York. In 1995 he received a PhD on the topic of Artificial Intelligence (AI) for music from the University of Edinburgh. Miranda is one of the pioneers in the use of AI in musical composition. His music has been performed at festivals and concerts worldwide, by renowned performers and ensembles, including Hausmann Quartet (San Diego), Leo String Quartet (City of Birmingham Symphony Orchestra), Sond’Ar-te Electric Ensemble (Lisbon), Ensemble Bash, Chamber Group of Scotland, BBC Concert Orchestra and Ten Tors Orchestra. His symphonies Mind Pieces and Sound to Sea have recently been published on CD by Da Vinci Publishing, Osaka, Japan. Also available on Spotify and other music streaming services.

Marcelo Gimenes is an educator, pianist and composer, known for his innovative research into computer music. Gimenes received a PhD in the field of Computer Music from the University of Plymouth and has worked at the Interdisciplinary Centre for Computer Music Research (ICCMR) on a number of research projects since. He has taught psychology of music and Artificial Intelligence (AI) at undergraduate and postgraduate levels at the University, and presented his research at international conferences. Gimenes’ career includes a comprehensive array of interdisciplinary activities aimed at bridging the gap between creative practices and computer systems. He is particularly interested in exploring music as an interactive medium through which people communicate and interconnect by means of AI technologies.
Linas Baltas is a Lithuanian composer based in Plymouth. He graduated from the Lithuanian Academy of Music and Theatre with BA in Music Composition. Subsequent postgraduate studies include Master in Music Composition and Licentiate of Arts in Music Composition also from the Lithuanian Academy of Music and Theatre. Baltas has composed over 10 pieces for symphony orchestra and over 50 compositions for chamber orchestras, ensembles, choirs and also music for theatre and cinema. His highly acclaimed Concerto Dew for tuba and symphony orchestra has been recently performed by Lithuanian National Symphony Orchestra at Lithuanian National Philharmonic Hall. Baltas compositions are regularly performed in Contemporary Art festivals in Lithuania, Germany, USA and UK. He currently is a Visiting Research Fellow at University of Plymouth’s Interdisciplinary Centre for Computer Music Research (ICCMR) where he conducts workshops on composition for postgraduate students.

David J. Peterson received BA degrees in English and in Linguistics from the University of Berkeley, and an MA in Linguistics from the University of California, San Diego. He is the one of the world’s most famous language creators. Peterson invented languages for various films and TV programmes, such as Walt Disney film Thor: The Dark World. And he is the creator of the Dothraki language for HBO’s fantasy series Game of Thrones.
VICTOR RAMIREZ LADRÓN DE GUEVARA

Victor Ramirez Ladrón De Guevara has over 20 years of experience as a director and performer working in México and England. He is trained in a range of diverse disciplines embracing aspects of Eastern as well as Western theatre practice. Currently, De Guevara is a lecturer in Theatre and Performance Studies at Plymouth Conservatoire, University of Plymouth, and programme lead for the MA/MFA Performance Training degree. His scholarly work is centred on the study of intercultural performance practices, the use and understanding of the body in performance and the interrelationship between theory and practice.

JOSH SLATER

Josh Slater is a contemporary dance artist, theatre maker and director of enCompass Collective Dance Theatre. Slater has created and toured dance and theatre works both nationally and internationally over the last four years. He is currently a lecturer in Dance, Theatre & Performance at Plymouth Conservatoire, University of Plymouth. He teaches movement practices across the Dance, Drama and Theatre & Performance degrees.
KAZ RAHMAN

Kaz Rahman is a visual artist and filmmaker whose style explores the intersection between Islamic artistic expression, the natural elements and contemporary culture. He recently authored the book *Islamic Art and Modernism: Formal Elements in Painting, Architecture and Film* and has had several solo exhibitions including *Flood in the Sky* (photography), *Magic Carpet* (painting), *Deccani Ark* (painting) and *Cinematic Landscapes* (painting). He is the producer of two feature films: *Salaat* (2010), which revolves around the five Muslim prayers, and *Deccani Souls* (2012), a mystical journey that weaves characters through the portentous streets, cafés and chaos of Hyderabad in India.

HEDY HURBAN

Hedy Hurban is a costume designer and composer, originally from Toronto, Canada. She has created original costumes and music for feature films that combine traditional concepts with contemporary materials and digital devices. Hurban studied for a Res.M in Computer Music at the University of Plymouth, where she developed the work *Dervish Sound Dress*. Her research examines how smart technology can be integrated into garments to harness the body as a musical instrument.
STUDY MUSIC AT THE UNIVERSITY OF PLYMOUTH

The School of Humanities and Performing Arts at the University of Plymouth offers a BA (Hons) Music degree with a focus on performance and creative practice. Students of the BA (Hons) Music gain the practical, critical and technical skills for a variety of music-related careers.

The future of the music industry lies with computer technology – and what we can do with that technology. It affects how we create, perform and distribute music. The ResM Computer Music is a master’s degree which enables students to study key concepts at the heart of music, science and technology. This master’s degree is as a stepping stone to the University’s MPhil/PhD Music degree. This programme immerses students in a world of cutting-edge research under the umbrella of the renowned Interdisciplinary Centre for Computer Music Research (ICCMR). ICCMR’s research expertise ranges from musicology and composition to biomedical applications of music and development of new music technologies.

Musical research at the University of Plymouth is truly interdisciplinary: the research team actively publish their research outcomes in learned journals and conferences in the fields of music, digital arts, computing, engineering, psychology, neurosciences and medicine.

BA (Hons) Music:
www.plymouth.ac.uk/courses/undergraduate/ba-music

ResM Computer Music:
www.plymouth.ac.uk/courses/postgraduate/resm-computer-music

MPhil/PhD Music:
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