



## **12<sup>th</sup> Conference of Italian Researchers in the World**

*Program*

**March 25, 2017**

**8:00 - 6:0 PM**

### **Opening Ceremony**

Auditorium (I Floor)

*Italian and American National Anthems*

Luca Cicalese, Andrea Duchini

Consul General Elena Sgarbi,

COMITES President Valter della Nebbia

Vincenzo Arcobelli Consigliere CGIE per gli USA

## **PARTICIPANTS (in alphabetic order)**

**Aduino, Roberto C.** - [Roberto.C.Arduino@uth.tmc.edu](mailto:Roberto.C.Arduino@uth.tmc.edu)

McGovern Medical School at The University of Texas Health Science Center at Houston

### Immune activation and inflammation: the current challenge beyond antiretroviral therapy

The introduction of combination antiretroviral therapy in 1995 has been associated with a significant decrease in the mobility and mortality of people living with HIV. However, HIV infection is associated with a 12-year shorter life expectancy. Most deaths result from non-AIDS related complications such as cardiovascular, liver disease and non-AIDS malignancies, likely driven by chronic inflammation and immune activation. Dr. Arduino will review current interventions under investigations to reduce systemic inflammation to improve quality of life and life expectancy of people living with HIV and research towards the HIV cure.

### Biography

Dr. Roberto C. Arduino is a Professor of Medicine at the of Division of Infectious Diseases at McGovern Medical School at The University of Texas Health Science Center at Houston and Clinical Research Site Leader for Houston AIDS Research Team (HART) of the NIH-funded AIDS Clinical Research Trials Network (ACTG).

Dr. Arduino graduated with Diploma of Honors from the Universidad de Buenos Aires, School of Medicine, Buenos Aires, Argentina where he was appointed as an Assistant Professor in Cell Biology and Histology, a position that he held for 8 years. He completed a residency in Internal Medicine and received fellowship training in Infectious Diseases in Buenos Aires. In December 1990, he joined the McGovern Medical School for a fellowship in Infectious Diseases, which he completed in February 1994, joining the Infectious Diseases Faculty in June 1997. He provides primary care to HIV positive patients at Thomas Street Health Center, a clinic that follows approximately 6,000 HIV-infected individuals.

His acquisition of molecular biology and immunology techniques and clinical investigation has resulted in the publication of 61 manuscripts in peer reviewed journals and 64 presentations at nationals and international meetings. He holds several NIH and industry sponsored grants.

Since 1997, Dr. Arduino has served as principal investigator for phase II and phase III clinical trials evaluating the safety and efficacy of several antiretroviral drugs, HIV vaccine trails, strategies for HIV cure and intervention to decrease the immune activation and inflammation associated to HIV infection.

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**Arrighetti, Noemi** - [narrighetti@houstonmethodist.org](mailto:narrighetti@houstonmethodist.org)

Houston Methodist Research Institute

### Beyond biological barriers: nano-delivery of small interfering RNA.

Arrighetti N<sup>1,2,3</sup>, Taraballi F<sup>2,3</sup>, Molinaro R<sup>2,3</sup>, Hartman K<sup>2,3</sup>, Tasciotti E<sup>2,3</sup>.

<sup>1</sup> Molecular Pharmacology Unit, Department of Experimental Oncology and Molecular Medicine, Fondazione IRCCS Istituto Nazionale dei Tumori, 20133, Milan, Italy. <sup>2</sup>Center for Biomimetic Medicine, Houston Methodist Research Institute (HMRI), Houston, TX, USA. <sup>3</sup>Houston Methodist Orthopedics & Sports Medicine, Houston Methodist Hospital, Houston, USA.

The use of RNA-based therapeutics aimed at interfering with cellular translational processes has been extensively investigated in the last decades and has shown potential in improving current anticancer therapies. The use of siRNA or miRNA to inhibit the abnormal expression of oncogenic genes possesses, in principle, many advantages in terms of specificity and efficacy compared to typical chemotherapeutic-based approaches. However, the design of efficient strategies based on RNA technologies must address *in vivo* limitations related to the stability and the targeting of the therapeutic. The recent development of nano-delivery carriers has been very efficient to enhance targeting properties, pharmacokinetics, and stability of pharmacological therapies, however, their use for siRNA delivery still far to be optimized. In fact, nano-carriers should be able to bypass several biological barriers in order to efficiently delivery the active siRNA to the defined target (1). In the laboratory of Dr. Tasciotti two different platforms has been developed to achieve these non-trivial tasks. Leukosomes (LK), which are lipid vesicles, enriched with immune cells proteins (2), and pH-responsive hybrid nanogel particles (HNP) (3). Here we present a work that describes the different pathways that these two delivery systems take in order to cross several biological barriers they encounter, and achieve the silencing of the target genes.

#### Reference

- 1) Muthiah M. et al. Expert opinion on drug delivery 2013, 10, 1259-1273.
- 2) Molinaro R. et al. Nat Mater. 2016, 9, 1037-46.
- 3) Khaled SZ. Et al. Biomaterials. 2016, 87, 57-68.

#### Biography

Noemi received her Bachelor's Degree in Biotechnology from University of Padua (Italy) in 2010 and her Master degree in Medical Biotechnology from University of Milan (Italy) in 2012. After graduation, Noemi started working at Istituto Nazionale dei Tumori di Milano (Italy) in Molecular Pharmacology department, collaborating on several projects. Noemi is currently enrolled in a Ph.D. programme in Life and Biomolecular Sciences of OPEN University (Milton Keynes, UK). During her Ph.D. work, Noemi is evaluating effects of heparanase/heparan sulfate system inhibition in pediatric sarcoma models. For this purpose she is testing a siRNA against heparanase. In addition, Noemi is investigating the suitability of innovative nano-delivery systems in Dr. Tasciotti laboratory (Houston Methodist Research Institute). Noemi joined the HMRI as graduate research fellow in January 2016.

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Baylor College of Medicine and Texas Children's Hospital

"Innovative and multidisciplinary research collaborations: developing the next generation of biomedical global health technologies to combat tropical infectious diseases"

The neglected tropical diseases (NTDs) are the most common infections of the poorest people in the world and who live on less than US\$2 per day. They include ancient scourges such as hookworm and other soil-transmitted helminth infections, Chagas disease, amoebiasis, schistosomiasis, leishmaniasis, dengue and zika. Together, these NTDs produce a burden of disease that in certain regions even exceeds HIV/AIDS, while simultaneously trapping "bottom billion" in poverty through their deleterious effects on child physical and intellectual development, pregnancy outcome, and worker productivity.

The high prevalence and incidence of the major NTDs afford an opportunity for joint cooperation and international alliances to address the highest prevalence conditions and accelerate the development of alternative control tools such as vaccines, drugs, and diagnostics. One of the major hurdles in the critical path for the development and testing of novel and translational discoveries is overcoming the "valley of death", or product development gap for taking a bench discovery to the point where it shows a clear path to the clinic. A perspective of a sustainable model to accelerate translation of discoveries into new biomedical innovations targeting NTDs will be presented.

### Biography

I am the Associate Dean of the National School of Tropical Medicine at Baylor College of Medicine and lead the research, education and management efforts of the school. I also serve as a Professor of Pediatric Tropical Medicine and the Deputy Director for the Sabin Vaccine Institute and Texas Children's Hospital Center for Vaccine Development. As an internationally-recognized scientist with more than 16 years of experience in translational research and vaccine development for neglected tropical and emerging infectious diseases, my major interest lies in the role of biomedical innovations as control tools integrated into international public and global health programs and initiatives. I was born in Genova, raised in Honduras and received my PhD from the University of Florida.

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Facebook

### From Italy to the Silicon Valley: accomplishments and failures

The Silicon Valley is perceived as the place where everyone is successful, and everything is easily achievable. Not always. My computer science career started in Italy at the Università Politecnica delle Marche. I came to the US to finish my Master Degree at the UC Berkeley where I did an Internship with Google and the Lawrence Berkeley National Lab working on the Google Glass. Indoor localization, image and voice recognition were three subjects I was working on. Since then I've been in two startups. The second one, Lily Robotics, taught me the hard lesson that, also here, success is not always guaranteed, not even with \$35 millions of dollars in the bank. I now work at Facebook.

### Biography

Mobile software engineer focused on iOS and Android platforms and passionate about image recognition and virtual reality. Currently working at Facebook on the Building8 team.

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### Sensitivity and Specificity of Different Combinations of Risk Factors for Pre-operative Obstructive Sleep Apnea Screening

Tanaya Sparkle, M.B.,B.S., Chuyan Cai, Ph.D., Carin A. Hagberg, M.D., Davide Cattano, M.D.,Ph.D. UTHSC-Houston, Houston, Texas, United States

Obstructive sleep apnea (OSA) is a disease that affects 9-24% of the adult surgical population. A great proportion of these patients remain undiagnosed and exposed to increased perioperative morbidity, especially respiratory complications.<sup>1</sup> It is therefore essential to screen patients for OSA preoperatively to identify patients at risk.<sup>2</sup> The objective of this study was to analyse different combinations of general and 'major' (designated a priori) risk factors for sensitivity and specificity. A secondary objective was to investigate odds-ratio for independent predictors of OSA through multivariate logistic regression model.

IRB approved retrospective analysis of a prospective observational database. Patients undergoing elective surgeries who visited the anesthesia clinic were screened for OSA utilizing a modified STOP-BANG questionnaire <sup>3</sup>. A total of 2937 patients were included in the study. Patients who reported a history of sleep study and a diagnosis of OSA, were considered positive for OSA. Frequency of OSA and other primary variables were assessed. Snoring (Yes/No), Neck Circumference (>40 cm Female 45 Male), BMI (>38 F 35 M) were designated major risk factors and apnea, male or female postmenopausal, age >50, BP, tiredness were designated as minor risk factors. Combinations of major, minor and general (major+minor) were analysed for sensitivity and specificity. All risk factors with a p-value <0.10 in univariate analysis were entered into a multivariate logistic regression model to identify independent predictors for OSA.

The sensitivity and specificity of combination of 3, 4, 5, 6 risk factors as a cut-off for OSA screening were 94.8/38.6, 85.9/64.4, 70.5/82.9 and 50.1/92.6 respectively. Sensitivity and specificity of a combination of 3 major risk factors was 33/94 and a combination of 2major+2minor factors was 57/86 respectively. A total of 7 independent predictors of OSA have been identified. The adjusted odds ratio was found to be highest for apnea (12.97 (9.85, 17.06)) followed by BMI (2.51 (1.85, 3.42)) and snoring (2.19 (1.62 2.96))

A cut-off of 3 risk factors provides highest sensitivity while a cut off of 3 high risk factors provides highest specificity. A cut off of 5 risk factors provides the highest sum of sensitivity and specificity. This novel modification of STOP-Bang score may be utilized during pre-operative assessments and decision making perioperatively. The adjusted odds ratio of risk factors may also be used to better understand the clinical utility of STOP-Bang score.

### Biography

Davide Cattano, M.D., Ph.D. is born in Rome, Italy (1974). Davide grow up in Rome and graduated from the Campus Bio Medico of Rome, Italy, Magna Cum Laude in 1999, with a thesis in Anesthesiology. After completing medical school, Dr Cattano was accepted in the residency program at the University of Pisa: he graduated in Anesthesiology, Intensive-Critical Care and Pain Management at the same medical school, Magna Cum Laude (2003), with an experimental thesis on the neuroprotective and neurotoxic effect of gas xenon, which granted him an award from Abbott, best graduation thesis for the residency programs of Tuscany.

After graduation Davide was hired by the Azienda Ospedaliera Versilia, while, the same year, he was accepted in the Ph.D. program in Morphology and Physiology and Pathophysiology of Cells and Tissues at the Department of Human Morphology and Applied Biology, University of Pisa, Italy. He completed his doctorate in 2007: his graduation thesis on the neurotoxic effects of the anesthetic Propofol in neurodevelopment age, published also monography, is considered one of the original investigation on the neuroapoptotic effects of propofol during early neurodevelopment. He also worked on several other projects, in particular on the neuroprotective effects of hypothermia, xenon and lithium. His doctorate was

completed as collaboration between three international schools, the University of Pisa, the Imperial College of London and Washington University in St Louis.

Dr. Cattano is currently an Associate Professor in the Department of Anesthesiology and medical director of the Preoperative Anesthesia Clinic Memorial Hermann Hospital and service Chief for ENT/OMF, plastic and eye surgery. He is nationally and internally recognized clinician and expert in airway management, respiration, coagulation, and perioperative outcomes. Davide is patient's advocate and expert in quality/safety (CS&E, orange belt). Above all, Dr Cattano has continued to engage in numerous collaborations, including several in Italy.

One of his latest publications pertained on the potential and differential effects that general anesthetics could exert on cancer that fostered a collaboration between the Departments of Otolaryngology, Pathology and Anesthesiology at UTHealth: Ferrell JK, Cattano D, Brown RE, Patel CB, Karni RJ. The effects of anesthesia on the morphoproteomic expression of head and neck squamous cell carcinoma: a pilot study. *Transl Res.* 2015 Dec; 166(6):674-82. Dr Cattano is investigating personalized approach to anticoagulation therapies that are important in the perioperative care. Dr Cattano is presenting an abstract related to a work presented at 2016 Anesthesiology Conference in Chicago. The work is an important clinical investigation on the epidemiology of sleep apnea, a respiratory compromise that affects subtly many subjects and often is left unrecognized.

*"We read the stories from the past, hundreds of immigrants leaving their homes, families, friends, roots. Two of my uncles left Sicily in the 60s looking for a better life. I always remember their stories. My father also told me of several other members at large of our family that left early in the 30s to find fortune in the States or South America.*

*I left to follow my interests and academic development, yet I found myself (and my family) to struggle at times with culture, rules, laws and discrimination. I still feel today, as I was told once you will always be, a stranger, yet my children are integrated and comfortable in their social interactions. I wish the italian community in the States will continue to prosper, remembering their roots and in particular support their members, without fear of retaliation and above all without the fear to remember or the compulsion to forget who we are and where we do come from". Houston TX, Davide Cattano XII Conferenza Riceratori Italiani all Estero.*

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### First Stars and Galaxies: The Quest Begins

I will present past and current results in the discovery of the peculiar class of astronomical explosion called Gamma-ray Bursts (GRB). In particular the discovery of GRB090429B, which is as of today the furthest single-star event ever observed by astronomers: we estimate that the explosion occurred only 600 million years after the Big Bang. The ongoing search for more of such object will reveal the nature of the first stars, the first galaxies ever formed, and give us unique insights on the formation of all matter we can see in the Universe.

### Research Summary

In the next decade a new generation of astronomical satellites and ground-based telescopes will enable to study directly the first stars and the galaxies where they live in. As of today, only a handful of galaxies have been confirmed to be in the redshift range  $z=8-10$ , which means that these galaxies have been assembled during the first 600 million years of the Universe history.

GRBs, instead, have such properties that allow us to detect them at even earlier times, and so to promisingly pinpoint to the very first stars (and galaxies) formed in the Universe (around 2-300 million years after the Big Bang).

GRBs explosion are the brightest object in the gamma-ray sky (during the first few seconds) and therefore can be seen at large distances. Furthermore, because of their nature they may be part of the first generation of stars produced after the Big Bang. Identifying such objects and determining their environment properties (their *host* galaxies) represent the most important routes to understand the origin of the Universe as we know it.

In particular two GRBs, GRB090423 and GRB090429B, have been identified and study at length by our group: thanks to spectroscopic observations of the GRBs optical and infrared emission (*afterglow*) it has been possible to determine that GRB 090423 exploded only 630 million years after the Big Bang (or  $z=8.2$ ) confirming that GRBs are indeed tracers of very ancient stars (in accordance with several theoretical expectations). Even more, optical and NIR images of the afterglow of GRB090429B have constrained the redshift of this object to be even higher ( $z\sim 9.4$ ).

I will present our current effort to discover many more of these objects using the NASA Swift satellite, the incoming new generation of Great Space Observatories, and the largest telescopes on Earth. These data will provide crucial information on the chemistry of the early Universe, from its metal content to stars and galaxy formation.

### Biography

I am current a post-doctoral fellow at the Space Telescope Science Institute in Baltimore (MD) and at the NASA – Goddard Space Flight Center. Born in Palermo, I graduated from Universita' Statale di Milano in 2004 and obtained my PhD from Penn State University in 2010. I worked at the UC Berkeley in 2010, UC Santa Cruz (2011-2013) and I was a NASA Postdoctoral Fellow (2013-2015). Since then I am a postdoctoral fellow at the Space Telescope Science Institute.

*Antonino Cucchiara, PhD*

**Della Rocca, Domenico Giovanni**  
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An Injectable Acellular Capillary Hydrogel Improves Left Ventricular Function After Myocardial Infarction

**Background:** We have recently developed a novel biocompatible hydrogel, gelatinized copper-capillary alginate gel (GCCAG), with a unique microstructure of continuous, parallel channels that can serve as a platform for cell recruitment, tissue formation and drug/cell delivery. The innovative feature of GCCAG is its use for intramyocardial injection to modulate scar tissue formation and negative remodeling after myocardial infarction (MI).

**Methods:** Shortly after MI induction in rats, GCCAG was injected into the antero-septal wall in the infarct border zone. Heart function was assessed via echo 48h post-MI (baseline) and after 4 weeks (final). Infarcted animals with no injection served as controls.

**Results:** A significant negative remodeling and wall thinning of the anterior wall occurred in the control group at 4 weeks. In contrast, GCCAG injection prevented negative remodeling and wall thinning in the gel group: anterior wall thickening (AWT) and fractional shortening (FS) were significantly higher at four weeks. The ANOVA results to evaluate if changes in AWT and FS differed as function of time and treatment confirm that the differences in LV functional parameters are significant ( $p = 0.0002$  and  $0.01$  for AWT and FS, respectively). Histology showed gel thickened the wall compared to controls and promoted neovascularization within and around the implanted gel.

**Conclusions:** Intramyocardial GCCAG injection effectively prevents LV negative remodeling and dysfunction after MI in rats.

Biography

Doctor Domenico Giovanni Della Rocca was born in Maratea (PZ) in 1984. He graduated from the University of Rome Tor Vergata in 2009. The same year he moved to Florida to work with Doctor Carl J Pepine as a research fellow. During his stay, he participated in the NIH Cardiovascular Cell Therapy Research Network (CCTRN) study group, which is a multicenter collaboration for clinical trials research in cell therapy. He focused his research on the effects of biocompatible hydrogels into myocardium in order to facilitate stem cell delivery and retention and limit the severity of post-infarction LV dysfunction. In 2012 Doctor Della Rocca started his Cardiology training at the University of Rome. In January 2017, during his last year of Cardiology fellowship, he started his research experience at Texas Cardiac Arrhythmia Institute at St.David's Medical Center, Austin (Director: Doctor Andrea Natale).

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My research approaches three novels considered to be the three 'bibles' of the decadent movement in French, Italian and English literatures : Huysmans's *A Rebours* (1884), D'Annunzio's own recreation of *A Rebours* , his own *Il Piacere* (1889), and Oscar Wilde's *The Picture of Dorian Gray* (1891).

### RESEARCH

To approach the literature of fin de siècle decadence as social critique, I have found that, in this era of emergent modernism, decadent literature tries to claim a more resistant and social critical position than does modernism, and that decadent literature, despite its superficial affinities with the Romanticism to which modernism also refers, not only is a literature of the struggle of the individual against an uncaring social world, but also underscores the necessity of reconstructing the hero/narrator's ego, as his identity reflects a class position which must be altered if it is to remain viable. What is overlooked in traditional approaches to decadent literature is its own frequent claims at social critique, toward which Julia Kristeva points in the untranslated second half of her *Revolution in Poetic Language* (1974). Moreover, much decadent literature emerges at a historical moment in which a ruling class is under fire; I believe that the typical "decadent" work portrays the deconstruction of a class, and the possible repercussions of that deconstruction for the individuals in it.

### Biography

Dr. Moira Di Mauro received her PhD at the University of Texas at Austin in Comparative Literature. Her field of study revolves around French, Italian, and English Narrative and Drama of the late 19th and early 20th Centuries. Her field of interest is meta-textuality, that is the tension between art and life, art and artifice, and the use of masks and masquerade in modern works. Her major focus lies in the French decadent period, those works following D'Annunzio's time in Italian Literature as well as various Irish writers of the turn of the century such as Bernard Shaw, Oscar Wilde, and Yeats. Since 1987, Moira, a native Italian, has been teaching French at Texas State University in San Marcos, from where she received a Master of Arts. In 2005, Moira introduced the Italian Language Program at Texas State University and directs a Summer Abroad Program to Italy every summer. Moira has traveled extensively throughout the world and currently divides her time between research and teaching in Central Texas and Florence, Italy. Her paper entitled "There Is No Place On Earth Like The World: Cultural and Sexual Politics in Behan's *The Quare Fellow* and *The Hostage*." has recently appeared in the volume on Prison Plays of the Rodopi Modern Literature Series. Moira is also the Vice President for the Central Texas Chapter of the American Association of Teachers of French (AATF) Executive Board (since Fall 2011) and the South Central Vice President of the French National Honor Society (Pi Delta Phi), covering Arizona, Arkansas, Kansas, Kentucky, Louisiana, Missouri, New Mexico, Oklahoma, Tennessee and Texas (since Fall 2010).

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Baylor College of Medicine and Texas Children's Hospital

### Impaired lysosome biogenesis due to NCL protein deficiency

NCLs are the most common group of inherited progressive encephalopathies in children, with a frequency in the United States of 1:10000. Inheritance is typically recessive, and patients are characterized by lysosomal accumulation of autofluorescent storage material (ceroid lipopigment), progressive loss of vision, mental and motor deterioration and premature death. To date, 14 different forms of NCLs have been identified, 13 of which have been associated with mutations in different genes. Whereas many NCL proteins are enzymes involved in protein degradation, some others are transmembrane proteins whose function has not been completely characterized. With the use of cell biology, biochemistry, and mass-spectrometry techniques we have examined the role of NCL transmembrane proteins in the biogenesis of the lysosome, and have identified a possible contribution to the maintenance of the steady-state of the lysosomal soluble protein component. In addition, we have identified a molecular connection between CLN3 and the autoimmune response that appears to be specific to this form of NCL. Our data establish a candidate role for NCL membrane proteins and may help explain some of the phenotypes observed in these diseases.

### Biography

Talented and hard-work scientist with an established success in managing and completing challenging research projects. Expert investigator with an extensive theoretical and technical knowledge in molecular genetics and cell biology. He is an experienced lecturer with a strong practice in presenting research findings in national and international meetings. Broad teaching expertise, including teaching molecular biology courses and laboratory techniques to graduate and medical students, postdoctoral fellows and physicians. His leading skills in conducting cutting-edge science projects led him to be co-author in several high-level, peer-reviewed manuscripts. His PhD training was focused on understanding the leading causes of Lysosomal Storage Disorders (LSDs). His studies led to the discovery of the Transcription factor EB (TFEB), a master regulator of lysosomal biogenesis. He is currently working on the characterization of molecular mechanisms that lead to Neuronal Ceroid Lipofuscinosis (NCL).

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## **Gianni, Carola**

Texas Cardiac Arrhythmia Institute, Austin , TX

### Left atrial appendage closure for stroke reduction in patients with atrial fibrillation

Stroke is a leading cause of death and disability, and its prevention is a priority for anyone involved in research and treatment of cardiovascular diseases. There are many conditions that increase the occurrence of stroke, among which atrial fibrillation (AF) is a leading risk factor. The left atrial appendage (LAA) is a small pouch - embryological remnant of the primitive left atrium - that is responsible for the increased risk of stroke seen in patients with AF. More specifically, the loss of contractile function in the LAA seen during AF leads to stasis and thrombus formation, which may then embolize into the systemic circulation. This is the reason why antithrombotic drugs are the mainstay therapy for stroke reduction in patients with AF. However, bleeding is an important potential complication of antithrombotic therapy, and many patients do not tolerate these drugs. Exclusion of the LAA from the circulation is an alternative non-pharmacological strategy, which has the potential to reduce the incidence of stroke in patients with AF without increasing their risk of bleeding. LAA exclusion can be obtained via surgical (ligation or amputation) or percutaneous approaches (ligation or mechanical occlusion). While surgical LAA exclusion can be considered in patients undergoing cardiac surgery, percutaneous LAA closure is a less invasive procedure that can benefit many patients with AF and high risk of stroke. Among the many devices designed for this, the WATCHMAN and Lariat are the only ones currently available in the United States and we've focused our research on their impact in clinical practice. By studying the outcomes of those who underwent this procedure in our center over the years, we sought to understand the benefits and risks of LAA closure, to determine which patient will benefit the most from this intervention.

### Biography

Carola Gianni graduated at the University of Milan in 2007 and specialized in Cardiology, focusing her interest in electrophysiology. While pursuing her PhD, she spent the last two years in Austin, conducting research on heart rhythm diseases at the internationally renowned Texas Cardiac Arrhythmia Institute, led by Dr. Andrea Natale.

### **Texas Cardiac Arrhythmia Institute**

The Texas Cardiac Arrhythmia Institute (TCAI), based at St. David's Medical Center in Austin, is an international treatment, training and research center specializing in heart rhythm disorders. TCAI is led by Dr. Andrea Natale, leader in the treatment of heart rhythm disorders, and is staffed by a team that includes some of the most prominent physicians and researchers in the field. In addition to caring for patients suffering from cardiac arrhythmias, the Institute is dedicated to furthering the understanding and treatment of this disease and serving as a primary educational resource for physicians around the world.

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University of Houston and Rice University

### Pirandello in America

My presentation will start from Luigi Pirandello's experience in America as a 'luxurious immigrant', when he was invited to introduce his idea of theatrical innovation to a New York audience, and will proceed to embrace the translation of this experience into the transoceanic immigration motif of some of his works. The focal point of my discussion will be the universal character of the '*pirandellian*' tales, which has to be examined not only from the historical and sociological perspective that allows one to grasp the effect of emigration on the Italian society at that time, but also the falling of the migratory phenomenon on the life of individual people. In fact, in Pirandello's '*novelle*' it is mostly one single character who, in his paradoxical and bizarre situations, lives the drama of the exodus and the up-rooted that a life without one's homeland entails.

### Biography

Maria Cristina Giliberti holds a Master's Degree in Foreign Language and Literature (Laurea in Lingue e Letterature Straniere) from the Università degli Studi di Bari, Italy, with her thesis on "Pirandello e lo Humour Inglese (Tra Rivalutazioni del Comico e Antinomie dell'Arte Umoristica)". She earned her Doctorate (Dottorato di Ricerca) in Italian Studies from the Università degli Studi di Bari, her dissertation being "Pirandello in America: Dati di Cronaca, Percorsi di Critica e Teoria". She was an Assistant Professor at the Università degli Studi di Bari from fall 1994 to spring 2000. She has taught the Italian language at a number of places around the world, including the University of Saint Thomas and Bellaire High School in Houston; St. Peter's Boys' High School, Staten Island, New York; Otsola Settlement Education Center, Pori, Finland; and Nicolet College, Rhinelander, Wisconsin. Currently she teaches Italian language and a survey on Italian literature at the University of Houston and Italian language at Rice University. She maintains a particular interest in 20th century Italian literature with a specific focus on the early novel and drama. Luigi Pirandello has been the main topic of her studies and publications.

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Houston Methodist Research Institute

### Modeling breast cancer progression and drug responsiveness on a biomimetic scaffold

Chiara Liverani<sup>1</sup>, Alessandro De Vita<sup>1</sup>, Silvia Minardi<sup>2</sup>, Laura Mercatali<sup>1</sup>, Dino Amadori<sup>1</sup>, Alberto Bongiovanni<sup>1</sup>, Toni Ibrahim<sup>1,#,\*</sup> & Ennio Tasciotti<sup>2,3,4,#</sup>

<sup>1</sup>Osteoncology and Rare Tumors Center, Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST) IRCCS, Meldola, Italy. <sup>2</sup>Center for Biomimetic Medicine, Houston Methodist Research Institute (HMRI), Houston, TX, USA. <sup>3</sup>Houston Methodist Orthopedics & Sports Medicine, Houston Methodist Hospital, Houston, USA. <sup>4</sup>Surgical Advanced Technologies Laboratory, Center for Biomimetic Medicine, Houston Methodist Research Institute, Houston, TX 77030, USA.

#These authors contributed equally to this work

Engineered *in vitro* models have led to new insights into the pathogenesis, prognosis and treatment of human diseases. This is particularly relevant for the field of oncology, as the behavior of cancer cells depends on the environmental conditions in which the tumor arise and develop. We studied within a biomimetic collagen-based scaffold two cell lines of breast tumor subtypes characterized by opposite clinical outcomes: MCF-7 that belong to the luminal A subtype often connected to indolent disease and a better prognosis, and basal-like MDA-MB-231 connected to high-grade and aggressive disease. We investigated their growth dynamics, molecular phenotypes and drug responsiveness performing multiple comparisons with standard monolayer cultures, animal models and patient samples. We demonstrate that breast cancer cells growing within the scaffold display *in vivo*-like growth dynamics, activate pathological hypoxic and glycolytic states, show increased chemotherapy resistance and a molecular profile closely matching that of *in vivo* tumors. Through a time-dependent investigation of these phenotypes and behaviors, we provide a comprehensive description of the mechanisms and signals that contribute to tumor evolution and to the emergence of drug resistance. This system may provide a key-enabling technology for disease progression modeling, biomarker detection, tumor invasiveness assays and drug efficacy screenings.

### Biography

Chiara received her Master's Degree in Pharmaceutical Biotechnology in 2010 from the University of Modena and ReggioEmilia. After her graduation, Chiara was awarded the Leonardo Da Vinci Programme scholarship and joined the School of Biosciences in Cardiff University for 3 months. In 2011 Chiara joined the IRCCS Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST) where she is currently working. She was involved in several preclinical and translational projects on cancer pharmacology and biomarker identification. In 2012 Chiara moved to the Houston Methodist Research Institute (HMRI) for a 6 months scientific mission to explore the use of collagen-based scaffolds to mimic and study the biological features of breast tumors. In 2013 Chiara enrolled in a PhD program in Bioengineering at the University of Bologna in collaboration with IRST. Her PhD project focus on the use of collagen scaffolds to investigate the mechanobiology of cancer cell and extracellular matrix interaction. In December 2016 Chiara rejoined the HMRI to complete her PhD work and carry on a research project to develop a liposome-based therapeutic strategy for targeting breast cancer.

**Lombardi, Angela** - [Angela.Lombardi@utsa.edu](mailto:Angela.Lombardi@utsa.edu)  
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Environmental quality in case of adaptive reuse: Learning from some case studies of damaged buildings in 2009 L'Aquila earthquake.

Angela Lombardi, John Murphy Jr., Simonetta Ciranna, Patrizia Montuori, Elsa G. De Leon

When deemed appropriate and beneficial to reconstruct an historical building damaged by earthquake, one often overlooked aspect of design and planning is assurance of environmental quality/indoor air quality.

The country of Italy is a productive area for this study based upon its central geological fault line that has shown a recent propensity to shift and its largely historic built environment.

This research analyses three historic structures damaged in the central Italy earthquake of 2009, which are planned for reconstruction and adaptive reuse specifically in the cities of L'Aquila and Ofena. Research final goal is to develop a methodology where reconstruction process decisions and materials' specifications become considerations for future environmental quality assessment. One of the case studies is Palazzo Carli Benedetti, located in the 'Centro Storico' of L'Aquila, Italy, where complete post-earthquake reconstruction and restoration were nearing completion. The other two buildings are still vacant waiting for reconstruction. They were selected to represent two different settings to allow for some geographical and technological variability: one is the former fascist Colonia Montana IX Maggio, at Monteluco di Roio, recently a *Università dell'Aquila* College of Engineering facility, the other building is the historic Palazzo Moscardelli, located in the historic center of the Medieval Hill town of Ofena, Italy.

Research investigates the history of each structure, their uses over time, design principles, and construction methods. In addition, testing protocol and documentation are presented, testing and sampling were completed for climatological data, and both indoor and ambient measurements for particulate counts, gases, total VOC's, and bio aerosols. Further explanation as to the specific importance of bio aerosol surveys is explained.

This research started in 2016 and is one of the results of an International agreement between the College of Architecture, Construction and Planning of University of Texas at San Antonio and the College of Engineering of Università dell'Aquila, aiming at setting up a methodology to be used for reconstruction process, leading to design guidelines and verifying their effectiveness, taking also in consideration International standards.

Biography

Angela Lombardi, Ph.D. is Assistant Professor in the College of Architecture, Construction and Planning at University of Texas at San Antonio, Texas since 2012. Dr. Angela Lombardi's internationally based historic preservation research focuses on the management of built heritage. In addition to being editor of the book *LIMA: The Historic Center. Analysis and Restoration* (Gangemi Editore, 2012), she has previously worked on the material conservation of the Cathedral of Siena, the Cathedral of Pienza, and on Lebanese archaeological sites of Baalbek and Tyre. Lombardi has been researching cultural landscape conservation issues in San Antonio, Texas with "Permanencias del territorio novohispano en la ciudad contemporánea de San Antonio, Texas," a chapter in the book *El Camino Real de Coahuila y Texas, patrimonio compartido* (2016). In 2014, she started two new funded research projects. One was on the GIS mapping of the Camino Real de los Texas, which identified the still existing features of the Spanish settlement of San Antonio. The other project, on a masonry and mortar analysis of two of the Franciscan Missions of San Antonio, was recently expanded by adding a structural assessment of the monuments. In 2016, she activated the international agreement with University of L'Aquila, Italy, which involves students in research that includes indoor air quality and passive ventilation strategies in historic buildings. She is also one of the contact person for the newly established agreement with Sapienza University of Rome, Italy, with the creation of a Graduate Students Exchange program.

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The effect of combined Inositols supplementation on maternal metabolic profile in pregnancies complicated by metabolic syndrome and obesity

*Background:* Myoinositol (MI) and D-chiro-inositol (DCI), belong to the Inositols family. Both stereoisomers have shown to improve insulin resistance in women with obesity, gestational diabetes and in post-menopausal women with metabolic syndrome (MS). We previously reported that offspring born to hypertensive dams lacking endothelial nitric oxide synthase (eNOS) and fed high fat diet (HFD) develop metabolic syndrome phenotype.

*Objective:* To investigate the effect of a mixture of inositols (MI/DCI) supplementation during pregnancy on the maternal metabolic profile in pregnancies complicated by MS and obesity using a pregnant mouse model.

*Study Design:* Female heterozygous eNOS-/+ mice with hypertension were placed on HFD for 4 weeks to induce a MS phenotype. Similarly, wild type (WT) female mice were placed on HFD for 4 weeks to induce a murine obesity model. All female mice were then bred with WT males. On gestational day 1 (GD1), dams were randomly allocated to receive either a mixture of inositols in water (MI/DCI, 7.2/0.18 mg/ml respectively) or water as control (placebo). At term, GD18, maternal weights, systolic blood pressure (SBP) and glucose tolerance test (GTT) were obtained. Dams were then sacrificed; pups and placentas were weighted and maternal blood collected. Serum levels of metabolic biomarkers relevant to diabetes and obesity (ghrelin, GIP, GLP-1, glucagon, insulin, leptin, resistin) were measured by multiplex elisa assay (Bio-Rad). Analysis was done comparing MS-Inositols-treated versus MS-non-treated mice and obese-Inositols-treated versus obese-non-treated mice.

*Results:* Mean SBP was lower in MS pregnant mice treated with inositols compared to placebo ( $p=0.04$ ), whereas there was no difference in SBP between treated and placebo obese pregnant mice. Pregnant MS mice treated with inositols showed lower glucose values during the GTT and in area under the curve (AUC, MI/DCI:  $17512.5 \pm 3984.4$  vs. placebo:  $29687.14 \pm 8258.7$ ;  $p=0.003$ ), but no differences were seen in the obese pregnant mice. Leptin serum levels were lower in the MS-Inositols-treated mice compared with the placebo group (MI/DCI:  $16985 \pm 976.4$  pg/dl vs. placebo:  $24181.9 \pm 3128.2$  pg/dl,  $p=0.045$ ). No other differences were seen in any of the remaining serum metabolic biomarkers studied in MS and in obese pregnant mice. Maternal weight gain was not different between pregnant dams with MS independent of treatment, while it was lower in the obese inositols-treated dams compared to the placebo group (MI/DCI:  $10.9 \pm 0.5$  g vs  $12.6 \pm 0.6$  g,  $p=0.04$ ). Fetal and placental weights did not differ between Inositols/-treated and non-treated pregnant dams with either MS and/or obesity.

*Conclusion:* Combined Inositols treatment during pregnancy improve blood pressure, glucose and leptin levels in pregnant dams with MS phenotype, but not in obese pregnant dams. In addition, Inositols treatment was associated with lower gestational weight gain in the obese, but not in the MS pregnant dams. Further studies are warranted to elucidate the molecular pathways triggered by Inositols, and to define the ideal timing, dose, and combination of Inositols stereoisomers of such a supplementation.

Biography

Dr. Monica Longo received her medical degree in 1996 from the "Facolta' di Medicina e Chirurgia, Univerista' degli Studi in Modena, Italy. In June 1997, she joined Dr. Garfield and Saade's research team at UTMB in Galveston, Texas. While working in Dr. Garfield and Saade's laboratories, she was able to earn her MMS degree in May 2001 and her PhD in 2005. In 2007 she started her residency in Obstetrics and Gynecology at UTMB and graduate in 2013. Then in 2013, she join as Associate professor, the department of Obstetrics and Gynecology, at the University of Texas Health Science Center at Houston. Here she started a basic science research laboratory, mostly working on preterm labor, hypertension and metabolic

syndrome in pregnancy. In 2016 she match as Maternal Fetal Medicine fellow at the University of Texas Health Science Center at Houston, where she currently is in training for her fellowship.

Since joining the Department of Obstetrics and Gynecology at University of Texas Health Science Center at Houston, Dr. Longo has been extensively involved in building up a basic science laboratory for bench and translational research. She has been actively involved in mentoring fellow, resident and faculty in their projects. She has various research interest, but her primary focus is in understanding vascular adaptations during pregnancy and the mechanisms regulating uterine contractility and preterm labor.

Her main research of interest is on the uterine and vascular adaptations occurring during pregnancy, the pathophysiology of hypertension and metabolic syndrome and its long term health consequence effecting the mother and offspring. Indeed epidemiological data have shown that several chronic conditions in life, such as cardiovascular disease, atherosclerosis, diabetes, and obesity, may be caused by abnormal uterine environment during fetal development and that pregnancy can be the window of future maternal and child health. This field, better known as Developmental Origin of Adult Health and Disease, recently has come to the forefront of medicine and Dr. Monica Longo is fast becoming one of the leading researchers in the field. Another area in which Dr. Longo is very active is preterm labor, another leading cause of increased neonatal morbidity and mortality. She has been working on preterm labor by characterizing new nano-delivery medication that target the uterine smooth muscle to decreased uterine contractility more efficiently, while having a safer profile and less side effect for the fetus. Most of the studies are accomplished using human and animal model.

Dr. Longo's has already being funded by National Heart, Lung and Blood Institute (NHLBI) and Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). Furthermore she is the recipient of several award at National and International meeting, recognizing her expertise in the field and the importance of the work being produced by her laboratory.

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### Customizing Students' Educational Experiences

Mark Ludorf, *Stephen F. Austin State University* (SFA) and Katherine Ludorf, Emory University

Over the last 150 years many industries (e.g., medicine, manufacturing, telecommunications) have transformed their processes and practices in response to changes in their operating environment. Unfortunately, (higher) education has not transformed its *one-size-fits-all* approach that ignores the heterogeneity found in students' backgrounds and abilities.

The research studies below examined a variety of methods used to go beyond the *one-size-fits-all* approach to create individualized learning experiences, thereby allowing students to more precisely demonstrate their knowledge.

In Study 1, the relationship between students' individual characteristics at the beginning of a course and course performance was examined. Multiple regression results showed positive relationships between some individual characteristics and course performance ( $p < .05$ ).

Study 2 attempted to address student heterogeneity by providing one group of statistics students an instructor generated (IG) 1-page help sheet whereas students in a second group (SG) constructed their own help sheets. Test performance variances showed significantly ( $p < .05$ ) less variability ( $s^2 = 143.04$  and  $248.06$ ) and significantly higher average performance ( $M = 82.97$  and  $78.81$ ) for the IG group relative to the SG group.

In Study 3, students individualized their learning experiences to fit their self-assessed assessment strengths and weaknesses by selecting any of the possible 31 combinations ( $N = (2^5 - 1)$ ) of five available assessments. Results showed reliably higher average course performance for students selecting 4 or 5 assessments as compared to 3 or fewer ( $M = 89.10$  and  $77.24$ ).

Results of these studies indicate that providing individualized educational experiences decreases variability (and increases average) of performance indicating that the assessments are better matching individual students' needs. Future research will examine and assess the effectiveness of other methods designed to individualize students' educational experiences.

### Biography

Mark Ludorf is a Full Professor of Psychology at *Stephen F. Austin State University* (SFA) in Nacogdoches, TX. He is a dual citizen of Italy and the United States, taught one summer at *John Cabot University* in Rome, and has led study abroad programs to Italy. He and his family are members of the *Italian Cultural and Community Center* in Houston. He has also attended several of the previous *Conferenze dei Ricercatori Italiani nel Mondo*.

During his 27 year career at SFA he has been named the *SFASU Alumni Association Distinguished Professor*, the *SFA Foundation Faculty Achievement Awardee*, an *American Council on Education Fellow* and has been nominated for the *SFA Regents Professorship*. His email is [mludorf.sfasu.edu@gmail.com](mailto:mludorf.sfasu.edu@gmail.com).

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Oklahoma State University

Utilizing Oklahoma native microalgae strains for hydraulic fracturing wastewater remediation

Giovanni Antonio Lutzu, Nurhan Turgut Dunford,  
Department of Biosystems and Agricultural Engineering and Robert M. Kerr Food and  
Agricultural Products Center, Oklahoma State University.

Oklahoma is one of the largest natural gas and oil producing states in USA. The oil and gas industry utilize fracking technology widely and generate large volumes of wastewater (frac water), which disposal methods are costly and adversely affect underground water sources. Development of new technologies for frac water remediation and reuse is critical for the long-term sustainability of this industry and most importantly for protection of the environment and human health. Frac water contains high concentration of inorganic salts and other organic pollutants. I have been working on the development of biological frac wastewater treatment technologies to reduce the adverse social and environmental impacts of oil and gas production in the state. Microalgae are ubiquitous photosynthetic microorganisms with a great potential to provide a viable solution to the problem of environmental pollution. The main objective of our research is to identify the Oklahoma native microalgae strains that are effective in cleaning up frac water and producing biomass. To accomplish this goal, 19 strains from 13 different genera were grown in unmodified frac wastewater. Wastewater quality before and after algae growth and produced biomass characteristics were evaluated for their suitability for crop irrigation and bioproducts development, respectively. We have identified some strains able to achieve a significant reduction in the concentration of pollutants. However, since biomass growth is depressed due to the low concentrations of essential macronutrient, further research to achieve higher biomass concentration and, consequently, higher contaminant removal rates by these strains, is ongoing.

Biography

This is an Italian environmental biologist with a strong interest on the use of microalgae for environmental remediation and as a priceless source of biofuel and bio-products. My area of expertise intersects various disciplines such as biochemistry, cellular biology, botany and ecology. After my B.S. in Biological Sciences at University of Sassari (Italy), a master at University of Ottawa (Canada), and my Ph.D in Environmental Sciences and Engineering at University of Cagliari (Italy) I have continued my investigations on microalgae field during my postdoc at the Qingdao Institute of Bioenergy and Bioprocess Technology (China). My research is basically addressed to explore the feasibility of using wastewaters as a culture medium to enhance lipid and bioproducts accumulation in microalgae cells. From August 2015 I am carrying out my research at BAE-OSU on the feasibility of isolated Oklahoma native microalgae strains for the treatment of wastewater generated during the fracking activity for the extraction of oil and gas.

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University Space Research Association, NASA Ames Research Center, Moffett Field, CA

### Per aspera ad astra

I think of myself as an experimental physicist as I have always been interested in how things work; but life made me wear also other hats as: engineer, programmer, husband and father. Since I was a kid I always had my head in the clouds, dreaming and thinking. Growing up I had been told to bring my feet to the ground, but instead I moved my gaze to the sky and made it my profession.

I have started my career in the CNR of Rome, calibrating and studying space qualified spectrometers for planetary research. I have then moved to Paris to analyze data from Mars. I am now in USA and I am the person in charge of the software that commands SOFIA's instruments, a NASA flying observatory, a modified 747 with a 3-meter diameter telescope that reaches the stratosphere (~13 km of altitude) and observes all possible wonders of the sky. If life ever taught me something, it is to never quit dreaming.

### Biography

#### EDUCATION:

- 2001 – 2004 PhD in Physics at “La Sapienza”, Rome, Italy; and PhD in Methods for Astrophysics at “Denis Diderot”, Paris, France

Title “Calibrations and preparation to the image-spectroscopy for planetary observations”

- 2001 Master in Physics at “La Sapienza”

Title “Spectroscopy of the External Solar System: calibrations and test of the VIRTIS instrument”

#### WORK EXPERIENCE:

- Dec 2013 – Present: Facility Science Instrument (FSI) Software Engineer at **USRA/NASA**

Software development and upgrade of Facility Science Instruments of the SOFIA project (FORCAST, FLITECAM, FIFI-LS, HAWK+). NASA regulation of releasing software.

- Dec 2012 – Nov 2013: Visiting Software Engineer at **USRA/NASA**

Software development of GREAT pipeline for ingestion and distribution of the SOFIA project

- Sep 2011 – Nov 2012: Research Proposer at **SETI**

Data analysis from satellite, analysis of the water vapor variability on Mars.

- Aug 2011 – Nov 2012: Language Assistant at **Trend Micro**

Creating database for machine learning algorithm to categorize webpages

- Oct 2009 – Jul 2011: Postdoctoral Fellow at **SRI International**

Design and build the CESAR project, an echelle spectrograph for Aeronomy studies.

- Nov 2007 – Oct 2009: NASA Postdoctoral Program Fellow at **NASA/AMES**

Analysis of the CRISM/ MRO mission to study water vapor activity on Mars at local scale

- 2005 – Oct 2007: CDD Software Engineer at the **Observatory of Paris**

Develop algorithm to study water variability on Mars using OMEGA/MEx data

- 2002 – Feb 2005: Research Contract at **IASF/INAF**

Calibrate and assemble VIRTIS-M spectrometer for VEx and Rosetta mission

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The University of Texas, Austin

*Un bolognese a Austin: The manuscript 13 of the Harry Ransom Center.*

The Harry Ransom Center at the University of Texas, Austin holds an impressive collection of books, manuscripts, and artifacts, whose origins span several centuries, the oldest document being an eleventh century codex from the Abbey of St Gall, Switzerland. Among the several documents of Italian origins, there is the manuscript 13, a 14<sup>th</sup>-century chant book from Bologna that contains the melodies and texts sung for the liturgy of the Mass. This book, which was likely used in a church tied to the Dominican order, presents a rich series of decorated initials and margins. The page dedicated to the feast of the Annunciation (25 March), in particular, offers a rare and ancient documentation of some traditional uses associated with Christmas that are still very popular in Italian culture. By maintaining an approach that is appealing to a general public, this paper will introduce the manuscript and will put it in connection with some of the most intriguing aspects of Italian musical and religious culture in the late Middle Ages.

My interest in this manuscript was sparked upon my arrival at Austin. Having been trained as a musicologist and a medievalist at the universities of Naples, Rome, UCSB, and The University of Toronto and Columbia University, I was hired at UT as an assistant professor in 2006. While continuing my main research focus on the musical and religious practices of medieval Europe, I became intrigued by this particular manuscript. Although the manuscript's connections with the city of Bologna and the Dominican order had already been identified by the Center's curators, some of the subtleties of its decorative apparatus could only be decoded by someone with an intimate understanding of Italian popular and religious traditions. My paper will also highlight some connections between this manuscript and some aspects of Dante's *Divine Comedy* of which the Center also holds a 14<sup>th</sup>-century copy.

Biography

Luisa Nardini, Associate Professor of Musicology

Ph.D. in Musicology, Università degli Studi "La Sapienza", Rome, Italy;

LMS-Postdoctoral License in Mediaeval Studies, Pontifical Institute of Mediaeval Studies, Toronto, Canada;

Diploma in Piano Performance, Conservatorio Statale, Benevento, Italy

Luisa Nardini is a medievalist with special interests in the later development of chant repertoires in Western Europe. Her works on Gregorian chant, medieval music theory, music and visual art, manuscript studies, and oral and written transmission of liturgical chant had been presented at scholarly forums in North America and Europe. She has published essays and reviews in *Acta Musicologica*, *Mediaeval Studies*, *Speculum*, *Plainsong and Medieval Music*, *Rivista Italiana di Musicologia*, *Nuova Rivista Musicale Italiana*, *Cantus Planus*, and in miscellaneous volumes. Her recent book, *Interlacing Traditions: Neo-Gregorian Chant Propers in Beneventan Manuscripts*, has been published with the Pontifical Institute of Mediaeval Studies—The University of Toronto Press, 2016. She also edited the proceedings *Intersecting Practices in the Production of Sacred Music ca. 1400-1600*, in *Journal of the Alamire Foundation* (2016). She is also working on a second book tentatively titled *Medieval Hypertexts: Prosulas for the Proper of the Mass in Beneventan Manuscripts* and on the edition and study of a 13<sup>th</sup>-century hymnary from Naples in collaboration with Bibiana Vergine.

Before coming to UT, Luisa Nardini served on the faculty of the University of California Santa Barbara as a lecturer in musicology. The first musicologist to be awarded an A.W. Mellon postdoctoral fellowship at the Pontifical Institute of Mediaeval Studies in Toronto, she has been an Associate Research Scholar at the Italian Academy for Advanced Studies in America at Columbia University and the recipient of research grants from the Universities of Naples, Rome, Italy, the University of California Santa Barbara, and The University of Texas, Austin. She serves as an honorary faculty member of the doctorate in musicology at

the University of Rome "Tor Vergata" and is regularly invited as a lecturer at the school of specialization on the Ars Nova in Certaldo, Italy. In 2012 she was awarded the "Gladiatore d'Oro," the highest honorific prize of the Province of Benevento (Italy) for "having contributed with her sophisticated, extraordinary, and passionate studies to the development of the scholarship in the field of medieval music and chant" and holds a Grace Hill Milam Centennial Fellowship in Fine Arts for 2012-2013. She was awarded a UT Humanities Institute fellowship for the fall of 2017 and a American Council of Learned Societies for 2018.

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Laughs and Shocks: The Performance of G.B. Pergolesi's *La serva padrona*.

On August 1752 a performance in Paris of an Italian short opera (then called an *intermezzo*) sparked a heated debate over the superiority of Italian or French music. The work staged in the French capital was Giovanni Battista Pergolesi's *La serva padrona*, probably the most famous comic intermezzo of the 18<sup>th</sup> century. The split between champions of the French traditional style and supporters of the new, modern Italian music had decisive consequences for the future development of opera in Europe.

My paper will introduce the audience to some of the characteristics and topics presented in Pergolesi's *La serva padrona* and to the reasons behind the debate on the respective merit of Italian and French music. I will also look at the comic features, the conventional use of stock characters from Italian *commedia dell'arte*, and the humorous characterizations that either amused or shocked the listeners of 18<sup>th</sup>-century Paris to demonstrate the modernity of Pergolesi's work.

Biography

Guido Olivieri is Senior Lecturer in Musicology at The University of Texas at Austin, where he also directs the Early Music Ensemble "Austinato."

His research has focused in particular on the developments of string sonata in Naples at the beginning of the eighteenth century, investigating problems of performance practice, aspects of musical patronage, and reconstructing the musical and cultural relationships between Naples and other European capitals.

Olivieri has co-authored the volume *Arcomelo 2013. Studi in occasione del terzo centenario della nascita di Arcangelo Corelli* (LIM, 2015) (together with Marc Vanscheeuwijck), and is the author of the critical edition of A. Corelli *Le sonate da camera di Assisi* (LIM, 2015). He has also published reviews and articles in scholarly journals (*Studi musicali*, *Rivista italiana di musicologia*, *Analecta Musicologica*, *Pergolesi Studies*, *Notes*, *Il Saggiatore*) and collective volumes (*Performance Practice: Issues and Approaches*, Steglein 2009; *Sleuthing the Muse: Essays in Honor of William F. Prizer*, Pendragon 2012), and presented papers at meetings of the AMS, SECM, IMS, among others. He has also contributed to *The New Grove Dictionary of Music*, the *MGG*, and the *Dizionario Biografico degli Italiani*. He is currently working on the critical edition of D. Cimarosa *Il matrimonio segreto* for Bärenreiter, in collaboration with the University of Vienna.

In 2016 he was the Chair of the Local Committee for the organization of the 7<sup>th</sup> Biennial Meeting of the SECM in Austin, TX.

Olivieri, holds a Ph.D. in Musicology from UCSB and a Diploma in violin from the Conservatory of Salerno (Italy), has been a Research Fellow at the University of Liverpool (UK) and The Italian Academy for Advanced Studies in America at Columbia University, and a Mellon Fellow and Visiting Assistant Professor at the University of Michigan.

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The University of Texas M.D. Anderson Cancer Center

### Production processes and R&D of new PET Radiopharmaceuticals

*Intro:* Positron emission tomography (PET) is a technique that measures physiological function by looking at blood flow, metabolism, neurotransmitters, and radiolabeled drugs. PET offers quantitative analyses, allowing relative changes over time to be monitored as a disease process evolves or in response to a specific stimulus. The technique is based on the detection of radioactivity emitted after a small amount of a radioactive tracer is injected into a peripheral vein. The tracer is administered as an intravenous injection usually labelled with fluorine-18, carbon-11, nitrogen-13 or radio-metals.

*Materials and Methods:* A 16 MeV cyclotron (GEHealthcare PETtrace) is located inside a vault for the production of PET radionuclides. There are four rooms dedicated to radiopharmaceutical manufacturing for clinical trials and another three rooms dedicated to research and development of new tracers. Each room has its own dedicated space for quality control of products. There are a total of 34 hot cells for radiopharmaceutical manufacturing. Fifteen of those are dedicated mini hot cells housing automated manufacturing equipment (GE Fastlab and Tracerlab series). The facility is equipped with a variety of analytical equipment in support of manufacturing and quality control operations. The PK Lab provides support to PET studies conducted at CABI that require analysis of biological samples.

*Results and discussion:* The Cyclotron and Radiochemistry Facility (CRF), established in 2009, has been able, over the course of 7 years, to be approved by the FDA for production of 5 drugs ( $^{18}\text{F}$ -FDG citrate,  $^{18}\text{F}$ -FDG phosphate,  $^{18}\text{F}$ -NaF,  $^{11}\text{C}$ -Choline and  $^{13}\text{NH}_3$ ). Several other compounds are being investigated in collaboration with scientists at MD Anderson and with other institutes. Some of new drugs are being tested during pre-clinical and clinical trials.

### Biography

Dr. Vincenzo Paolillo earned a Master of Chemistry at Università degli Studi di Bari "Aldo Moro" with a focus on environmental chemistry and air quality monitoring. He subsequently obtained his PhD in Chemistry with a thesis titled "New syntheses and techniques for preparing radiolabeled compounds for molecular imaging". During his PhD he was trained at UT MD Anderson Cancer Center on the synthesis of new drugs for positron emission tomography. Upon completion of his PhD he returned to MDACC for postdoctoral research. He is currently a Senior Radiochemist at MD Anderson's Center for Advanced Biomedical Imaging (CABI).

#### Description of Research:

- Synthesis of FDA approved radiolabeled compounds for PET imaging (such as  $^{18}\text{F}$ -FDG,  $^{11}\text{C}$ -Choline,  $^{11}\text{C}$ -PBR28,  $^{18}\text{F}$ -THK5351), produced under CGMP guidelines
- Quality control analysis and development of new analytical methods
- Cyclotron operations
- Research, development and synthesis optimization of new potential compounds for molecular imaging
- Pharmacokinetic analysis of biological samples collected from patient during clinical trials of radiolabeled drugs
- Production and purification of radiometals (such as  $^{64}\text{Cu}$ ,  $^{89}\text{Zr}$ ,  $^{86}\text{Y}$ ) for research purposes

*Vincenzo Paolillo, Ph.D.*

*Senior Radiochemist*

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Stanford University School of Medicine, Stanford, CA

### Revealing the Identity and Function of Stem Cell Progenitors in Skeletal Muscle by Single-Cell Mass Cytometry

Ermelinda Porpiglia<sup>1,2</sup>, Nikolay Samusik<sup>1</sup>, Andrew Tri Van Ho<sup>1,2</sup>, Benjamin D. Cosgrove<sup>1,2</sup>, Thach Mai<sup>1,2</sup>, Kara L. Davis<sup>1</sup>, Astraea Jager<sup>1</sup>, Garry P. Nolan<sup>1</sup>, Sean C. Bendall<sup>1</sup>, Wendy J. Fantl<sup>1,3</sup> and Helen M. Blau<sup>1,2</sup>

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Adult muscle stem cells are the driving force in skeletal muscle regeneration, a dynamic process during which the state and identity of the cells involved changes over time. Mostly dormant in healthy individuals, muscle stem cells awaken in response to muscle damage to produce specialized progeny, muscle progenitor cells, which will repair the damaged muscle. While the identity of muscle stem cells has been previously established, muscle progenitor cells, which represent a stage in between the stem cell and the mature muscle cell, have not yet been identified. A major challenge in their identification has been a lack of tools to dissect the cellular complexity of skeletal muscle, emphasizing the importance of single-cell studies. Here, we have capitalized on single-cell mass cytometry, a new technology that allows the identification of new cell populations within complex tissues, to capture stem cell decisions in skeletal muscle. We discovered surface markers that enable the identification and isolation of muscle progenitor cells and resolved the intermediate stages of myogenesis during muscle regeneration at an unprecedented level of detail. In the blood, the discovery and isolation of stem and progenitor cells many decades ago was instrumental for understanding their role in regeneration and elucidating the mechanisms of blood cancers, which led to the development of therapies for several blood diseases. Similarly, the elucidation of muscle progenitor cells has the potential to reveal the key events that regulate muscle regeneration and unravel the mechanisms of cancer, promoting the development of new therapies for muscle diseases.

### Biography

#### EDUCATION:

Postdoctoral Training, Stanford University, Stanford, CA (2011-present)

Ph.D., Immunology and Virology, University of Massachusetts Medical School, Worcester, MA (2004-2011)

BS/MS in Medical Biotechnology University of Bologna Medical School, Bologna, Italy (cum laude) (1998-2003)

#### RELEVANT EXPERIENCE:

Postdoc, Stanford University School of Medicine, Stanford, CA (2011-2016)

Project: Lineage mapping of myogenesis in vivo at single-cell resolution - Pioneered single-cell mass cytometry to the study of skeletal muscle heterogeneity - Identified novel progenitor subsets in vivo in mouse skeletal muscle - Discovered a muscle stem cell subset with superior regenerative potential in aged mice

Doctoral Research Scientist, University of Massachusetts Medical School, Worcester, MA (2005-2011)

Project: Digital and Analog modes of Stat5 signaling regulate distinct biological functions in erythropoiesis - Developed a new system for in vivo single-cell measurement of Stat5 signaling in erythroblasts - Identified two novel modes of Stat5 signaling, digital and analog, in erythroid progenitors - Defined the mechanistic basis for these modes of signaling, and their biological relevance, with profound implications for the development of therapies for blood cancer

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Texas A&M University

### Research Summary

My research work focuses on applying Operations Research methodologies (such as Modeling, Simulation, Optimization, Algorithms) primarily to Transportation Systems to evaluate and enhance their Performance (in terms of Service Quality, Cost-Effectiveness, Efficiency and so on) and to help in the Decision Analysis process in the Design or Operational phases. Most of my work has been on Transit design, specifically on Demand Responsive Transit systems, such as ADA Paratransit and Feeder Transit and Ridesharing services. However, I have done some work on: Algorithms for Traffic Signal Coordination; Transportation Planning Decision Analysis; Optimal Distribution of Emission Reduction Technology; Port Operations

### Biography

Dr. Luca Quadrifoglio graduated with the Laurea in Chemical Engineering (1996) from the Politecnico of Milan (Italy) and worked 5 years for Snamprogetti (ENI Group). He received his M.S. (2002) and Ph.D. (2005) from the Daniel J. Epstein Department of Industrial and Systems Engineering at the University of Southern California. Then he worked as a Postdoc at the USC's Department of Homeland Security Center for Risk and Economic Analysis of Terrorism Events (CREATE) until August 2006. Then he joined the Faculty of the Zachry Department of Civil Engineering (Transportation Division) at Texas A&M University. Dr. Quadrifoglio has more than 50 refereed publications, won the 2004 Council of University Transportation Center (CUTC) National Student Award for best publication in Science and Technology and the 2006 Pritsker Doctoral Dissertation Award (3rd place). He was the recipient of a Fulbright Scholar Award in Science and Technology in 2015. He served as the Editor for Paratransit Committee (AP060) at TRB and he is on the Editorial Board for Transportation Research – Part B.

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Oklahoma State University

### Italy as the platform for architectural investigations

A serendipitous discovery back in graduate school triggered an interest in modern architecture in Italy during the interbellum. It was only in recent years, however, that the occasion arose for me to seriously initiate a research agenda when for the first time I offered an elective course on the subject at the Oklahoma State University School of Architecture. If Italian rationalist architecture has become the core of my research, it is just a tile of a larger investigative mosaic I have undertaken in the field of architecture and its education. Since initiating teaching at Oklahoma State University, one of my pedagogical objectives was to use Italy as the platform for architectural investigations. Virtually every year I was invested in the role of coordinator of the design studio, I sited architectural projects in Italy. In 2010 a change in our curriculum further gave me the occasion to permanently include Italy in my pedagogical quest and creative act. At that time I instituted and offered since, a fifth-year elective design studio that connects students with the reality of the architecture profession in Italy by teaming up with a boutique architecture firm based in Ivrea (Torino), to conjointly work in professional design competitions in Italy. As far as I know, there is no similar design studio across the over 100 schools of architecture in the United States. But the studio environment is also where I test paths to creativity, experiment research methodologies, and explore output formats. In the classroom, supporting my lectures are visual communications that I specifically design to augment students' understanding and retention of complex topics.

The investigations I am undertaking will not lead to the next scientific revolutions but are essential in shaping a generation that as never before will be so global oriented. They also exhibit my ambassador spirit.

### Biography

Paolo Sanza is an Associated Professor at the School of Architecture at Oklahoma State University where he teaches architectural design studios, introduction to building systems, and a hybrid design/history course on modern architecture in Italy during the interbellum. Before moving back to Italy and eventually the United States where he earned his Master of Architecture at Arizona State University, Paolo lived in Ethiopia. He is a registered architect in the State of Arizona, founding partner of p(S)ar architects, a research office focusing on the interrelationship between architecture and graphic design and design director in the multimedia studio digital extension.

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### The meaning of *typography* today

Graphic design is unique among all design disciplines because of its deep roots in language. Graphic communications rely on the interaction of words and images to convey a message that is almost always dependent on language and its cultural context. As a consequence, the heart of our practice is typography, a set of conventions that allow us to represent, however crudely, the rich inflections and rhythms of spoken language.

Typography is two-dimensional architecture, based on experience and imagination, and guided by rules and readability. And this is the purpose of typography: The appropriate arrangement of design elements within a given structure should allow the reader to easily focus on the message, without slowing down the speed of his reading. We don't lack time: we lack front-end clarity. We don't need to manage time: we need to manage information and assign priorities. Only when we know where it is we want to go, can we figure out how to get there as fast as possible.

As a designer as well as an educator, I've always observed that inspiration exists but it comes to one while in the midst of work, is something perhaps spurred by our working process. Absolute mindfulness before the moment is key; it is then that discoveries lead us to true knowledge.

Taste, good taste, can only be developed by studying the best examples. No one is born with good taste; it is always the result of education. The inexperienced do not have it. If the letters surrounding us were good, good letters might set a trend. But since even poor design so often becomes fashionable, and since almost all lettering is bad, no improvement is in sight unless some good designers set a good example. If this occurred, there would soon be imitators.

### Biography

A communication designer who specializes in typography, Segalini studied and practiced graphic design and calligraphy in Milan, Helsinki, Philadelphia and Rome. In 2010 he co-founded IStype (Istanbul Type Seminars), a lecture and workshop series devoted to encouraging typographic literacy in Turkey. He teaches typography at Texas State University, School of Art & Design. Segalini also designed the typeface Hemingway, which was inspired by the novel *The Old Man and the Sea*. Segalini's Hemingway typeface was selected for the UK Creative Review Type Annual 2011 within the "Display Text" category.

**Taraballi, Francesca** - [ftaraballi2@houstonmethodist.org](mailto:ftaraballi2@houstonmethodist.org)

Houston Methodist Research Institute

### Biomaterials design for Translational Medicine

*Taraballi F. and Tasciotti E.*

Creating biomaterials for tissue healing has been a daunting challenge in the past twenty years. During this time frame, many efforts for developing new devices to support different clinical practices failed to complete the translational steps from “bench to bedside”. Successful treatments will require advances in areas ranging from basic cell biology to material synthesis. One of the main reasons why the biomaterials field did not capitalize on the past promising advances is due to the lack of a complete investigation of the physiological and molecular mechanisms involved in the biomaterial/tissue interactions. This justification should not be considered an oversight but rather a new perspective on facing the biomaterial development in order to accelerate the process of clinical translation. Dr. Taraballi worked on a variety of material-based platforms with a translational approach, from biodegradable polymers for wound healing to nanoparticle treatments for angiogenesis and inflammation. She will present an overview of her past and present working areas focusing on the important steps of biomaterials design toward the translation in clinical practice.

### Biography

Dr. Taraballi earned her B.S. in Biological Sciences, her M.S. in Biochemistry at the University of Milan - Bicocca, Italy, and a Ph.D. in Nanostructures and Nanotechnologies from a joint program of the Materials Science Department of University of Milan - Bicocca with the Lawrence National Berkeley Laboratory (LBNL) in 2009. Her research focused on tissue engineering for different applications (spinal cord injury, cardiovascular, musculoskeletal). Dr. Taraballi has extensive training and hands on experience in tissue engineering and materials science. Dr. Taraballi worked in different laboratory such as the Department of Biomedical Engineering of TAMU (College Station, TX), the Molecular Foundry at LBNL (Berkeley, CA) and the School of Materials Science and Engineering of NTU (Singapore). Dr. Taraballi developed in her career many tissue engineering platforms applied to different regenerative medicine approaches: from neural to bone and cartilage regeneration. She has authored more than 40 papers and book chapters in the fields of nanomedicine and materials science, as well as multiple patent applications. She permanently moved back to the United States in January 2013 at Houston Methodist Research Institute in the Center for Biomimetic Medicine with a research focus on biomaterial functionalization for immune modulation. She became Instructor at the end of 2015.

*Francesca Taraballi, Ph.D.*

*Instructor*

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## **Ugolini, Valentina**

Methodist DeBakey Cardiology Associates

### Healthy Eating Habits that Will Change Your Life (strategies to eat and stay healthy)

#### Biography

I was born and raised in Rome, Italy. At the age of 24 I was invited to participate in a week-long seminar taught by an Italian-American researcher, Dr. Donald Capra.

At the end of his lectures he asked if I might be interested in basic science research and I left Rome to join him and his researchers. I worked with them for 2 and 1/2 year and had good success, but I was more interested in taking care of patients.

My husband Antonio Pacifico worked with me and together we passed all the necessary exams, became Fellows of the American College of Physicians and later of the American College of Cardiology. After completing our training we moved to Houston and worked hard.

We had 3 girls. My husband died in 2005 in a plane accident. We were both pilots.

I now work at the Houston Methodist Willowbrook Hospital

Over the years:

In 2005 there was a unusual cluster of young athletes who died during sports events. In those times no one had a defibrillator, other than the EMS.

I then established a collaboration with the Houston Methodist Hospital and we donated 400 AEDs to all the HISD schools and Spring Branch. I also donated 20 AEDs to Rice University, along with training and a presentation regarding AEDs. I even donated 5 AEDs to the Alamo.

We realized that we needed not just AEDs but also the knowledge on how to use them.

So, we started a collaboration with the American Red Cross and offered 6 training sessions (once a year).

Later on, there were some rearrangements within the Red Cross and we transitioned to the American Heart Association. We completed 6 additional training sessions, including training for the deaf.

We had started working on Memorial Park, but a severe drought decimated the trees. A large effort of re-forestation was started and the Park is as good as it was in the past. We donated 9 AEDs to the Park, 3 AEDs to the Houston Arboretum, and we hope in the future to deploy poles containing AEDs with communication capacity, so that the EMS will be able to identify where the distress call originated.

*Valentina Ugolini, MD.*

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*Weil Cornell Medical College*

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### In search of Supernovae at the Lick Observatory

Located at Lick Observatory atop Mount Hamilton east of San Jose, California, the 0.75-m Katzman Automatic Imaging Telescope (KAIT) is a robotic telescope dedicated to the Lick Observatory Supernova Search (LOSS) and the monitoring of variable celestial objects. It is equipped with a CCD camera and an automatic auto guider (that is, the auto guider is able to find its own guide stars).

KAIT is the third robotic telescope in the Berkeley Automatic Imaging Telescope (BAIT) program. One of the main goals was to discover nearby supernovae (redshift typically less than  $5000 \text{ km sec}^{-1}$ ) that can be used for a variety of studies.

Through the Lick telescope, we were able to observe previously discovered supernovae, while the KAIT allowed us to study and discover more about the more recently discovered supernovas. The different methods of calculating the distance of a supernovae along with determining the type of supernovae from the data collected were used. Newly discovered objected are automatically compared to existing template to identify supernova candidates. Then the results are passed to student research assistants.

Observation efficiency was obtained by optimizing the system in every possible way. The search images were taken via a hole positioned in the filter wheel and no filter was used. This technique increases the observation efficiency when compared with observations using the R-band filter.

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Baylor College of Medicine

### Becoming a geneticist: a tale of passion, family and hope

The presentation will focus on the path that lead Dr. Vetrini from his beloved Naples to Houston, his life as an immigrant and father of two, and finally will touch on his scientific ground breaking Whole Exome sequencing studies, a revolutionary tool at the interface between human health and gene discovery.

### Biography

A native of Naples, Italy, Dr. Vetrini in 2000 received his *Laurea* in Biological Science with *summa cum laude* (110 e lode) with specialty in Molecular Biology and Genetics from the University of Naples Federico II. Subsequently, he was the recipient of a scholarship granted by Telethon Foundation to work at TIGEM in Naples under the direction of Dr. A Ballabio. During his PhD studies in Medical Genetics he received a rich training and produced original scientific works in the field of Genetics including transcriptional regulation and functional characterization of new human genes. Amongst others, he identified and characterized the mechanism of organelle biogenesis and worked on the characterization of mutations that affects gene regulation; he has been a pioneer of exon skipping gene-targeted therapy. During this period he also collaborated on the first European consortium for characterization of ocular stem cells molecular signature.

After completing his PhD studies in in 2007, with a scholarship granted by TELETHON foundation, he joined the Baylor College of medicine in Houston through a J1 visa. In the dept. of Human Molecular Genetics, in the Dr. Ng's lab, a pioneer of Adenoviral directed-gene therapy, he has worked on gene Therapy of metabolic disorders in both rodents and primate models and gave his contribution to the biology and immunology of Adenoviral vectors. In 2011 joined Dr. Andrea Ballabio lab under H1B visa where he worked for a joint venture between NRI institute and Shire Biotech on gene therapy for neurodegenerative diseases.

In 2014 he joined Baylor-Genetics laboratory as a clinical scientist where he now has been promoted to the position of Lead Clinical Genomics Scientist. Here, he leads a team of MD/PhD level scientists involved in the clinical application of Next Generation Sequencing, a cutting edge technology that allows the analysis and the interpretation of thousands genetics variants found in patients that is revolutionizing the medical science and is advancing our knowledge of human biology and disease. Amongst many scholarship and training awards, he recently received the Baylor Miraca Award for the discovery of a new gene involved in human embryonic developmental defects.

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The University of Texas

### “Il Magnifico Apparato” Fireworks and Firearms in XVIII century Italy“

A presentation of a XVI century manuscript on the art of making fireworks and firearms for the amusement of the population and the warfare against the enemy of the Faith.

With twelve pen drawings with watercolor gouache, by Stefano Della Bella (1610-1664)

This is a shorter version of my article on the same topic that was published in Franco Maria Ricci's art rivista, FMR, in English, Italian, French and Spanish.

This manuscript is part of the 5354 Ranuzzi manuscripts in the Italian Collections, at the Harry Ransom Humanities Research Center, The University of Texas at Austin.

This presentation is an analysis of the text and art work of the manuscript, and a description of the use of fireworks on the occasions of many celebrations in the Papal State of Bologna: noble weddings, royal visits, funerals, installation of a new Senator.

In the text, many words seem to point to a link with Neapolitan dialect. It is possible that the manuscript was written in or near Naples, and the drawings were added later. This often happened in illuminated or illustrated manuscripts and early books.

The list of ingredients used to make the fireworks provide a humorous side of the story.... As does the instruction for the use of firearms only in defense of the ...Faith.

The late XVI century date of the manuscript was established as circa 1583, according to the description of the watermark in the Briquet edition of the history of watermarks.

Beautiful images and interesting text makes this manuscript one of the most discussed and displayed manuscript in the collection.

### Biography

Dr. Maria X. Wells received a doctorate in Comparative Literatures and Languages at the University of Pisa. To complete her dissertation she spent one year at the University of Texas with a Fulbright Scholarship, and a month at the American Academy in Rome. She was invited to teach at the University of Texas and to continue research in American and Latin American Literature.

The subjects of her Seminars and lectures, are both comparative and interdisciplinary. They include, History of the Language, and dialects of the Veneto, Literature and Theatre. Her main areas of research and teaching are Medieval, Renaissance, Modern and Contemporary.

As Curator of Italian Collections at the Harry Ransom Humanities Research Center, she has been in charge of all aspects of these collections: description, in depth research, exhibit projects, catalogues and use of the collections for class instruction.

The major authors of her manuscript, textual research, publications, teaching and lectures are:

Natalia Ginzburg (theater production) Carlo Levi, (painting and narrative) Paolo Volponi, (the industrial novel) ; Niccolo Ammaniti, (novel and film) Luigi Pirandello and Miguel De Unamuno (la realidad de los personajes) and Bernard Simiot (Marocco in the narrative of B.S./ Le Maroc dans les livres de Bernard Simiot).

She has given lectures in the U.S.A. Italy, in Conferences and as an Invited Speaker” (University of Bergamo, Central State Archives, Rome, University of Pavia, International Joyce Symposium in Trieste) Belgium (Universite' Libre de Bruxelles and Universite' de Liege) Oxford, Spain (Universidad de Oviedo) France (Universite' de la Savoy, Chambéry). In 1986 she organized a Symposium on “The Leopard: novel, history and film” with the participation of Giuseppe Lo Piccolo, Prince of Lampedusa and Burt Lancaster, among others. In 1988 she gave one of the Centennial Lectures at the University of Bologna, on the occasion of the University 9<sup>th</sup> Centenary, on the topic “I Lettori del '500: corrispondenza dell'Accademia degli Oziosi)

For her academic achievements, and her work as Liaison between the University of Texas, the Italian Embassy, and the Italian Consulate in Houston, she was given the title of Cavaliere al Merito della Repubblica Italiana.

*Maria X. Wells*  
*Adjunct Professor (Emeritus)*  
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### Boccaccio and Romance

Boccaccio's engagement with the genre of romance throughout his life as a writer shows that even when he wrote his masterpiece, the *Decameron*, he still struggled to resolve the conflict between his continuing attraction to the genre he tried to master, and his resistance to it because of its association with illness, in particular, lovesickness.

After defining romance as Boccaccio knew it in his own time, I will discuss his continuing engagement with the genre looking at two moments in his literary production: 1) the time he spent in Angevin Naples composing romances; and 2) the period in republican Florence during which most of the *Decameron* was written. Each of the two phases under consideration reveals a distinct attitude on the author's part toward romance, but all point to an irrepressible impulse to draw on his experience as a reader, writer, and critic of this genre. Inasmuch as Boccaccio actively pursued a career as a writer of romances during his period in Naples, the works he wrote there show what Boccaccio's perception of romance was and how they prepared the author to compose the *Decameron*. In writing the *Decameron*, in fact, Boccaccio spurned the long-winded romance, the genre of his youthful literary debut, in favor of the more manageable *novella*, although even these short tales, which seem the opposite of romance, continue to use elements of that genre, either themes, structures, or images and motifs.

A principal problem in the study of Boccaccio is a failure to consider fully that he was influenced by every type of romance available to him throughout his career. While critics have discussed this matter in terms of individual works, we must acknowledge his lifelong predilection and tendency to experiment with romance throughout his literary career.

### Biography

Molly Mezzetti Zaldivar has served as coordinator of Italian Language and Culture Studies in the Department of Modern Languages and Literatures at the University of Texas at San Antonio since 1999. She earned a Bachelor of Arts from Middlebury College in Italian and Political Science in 1987, a Master of Arts in Italian Literature and Culture from Boston College in 1994, a Master of Arts in Comparative Literature from the University of Texas at Austin in 1997 and a Doctorate in Comparative Literature from the University of Texas at Austin in 2004.

In 2012, Molly helped develop a program for students in the College of Liberal and Fine Arts at UTSA to study for a semester in Urbino. She is a frequent faculty member in this program.

Her research encompasses topics ranging from the three crowns of Italian literature, Dante, Petrarca and Boccaccio, to 21<sup>st</sup> century Italian cinema.

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### How our cells know their food: studying nutrient sensing in health and disease

How do cells know what nutrients are available to sustain their growth and proliferation? This deceptively simple question (akin to asking how our stomachs communicate their food content to the body) turns out to be an incredibly sophisticated process known as ‘nutrient sensing’, in which hundreds of molecular species work together to provide the cell with real-time information on which nutrients are changing and by how much. In turn, precise and accurate nutrient sensing is key to the correct function of many different cell types in organs such as muscle, liver and brain. Moreover, when this process becomes dysfunctional, a wide number of human pathologies can result, including cancer, diabetes and cardiovascular disease. I will briefly summarize the current knowledge on the nutrient sensing process, how it has become the focus of my scientific career, and why I decided to move to the United States to pursue this fascinating research endeavor.

### Biography

Growing up in Sardinia with my parents, both medical doctors, I became inspired to study human diseases using the most advanced methods made possible by recent developments in recombinant DNA technologies. To pursue this goal, I enrolled in Biological Sciences at the University of Pisa. In addition to coursework, in Pisa I gained my first exposure to experimental research, working in a neurobiology lab in the Department of Physiology and Biochemistry. In 2001, I began my PhD studies in Neurobiology and Cell Biology in the laboratory of Dr. Pietro De Camilli at Yale University School of Medicine (New Haven, CT). In the De Camilli lab, I learned and applied sophisticated microscopy techniques to study the molecular basis of cellular communication, and how errors in this process can contribute to cancer and other diseases. This work was supported by the Boehringer-Ingelheim Predoctoral scholarship, and resulted in several publications in journals such as *Cell* and *Proceedings of the National Academy of Sciences* (PNAS). After obtaining my Doctorate from Yale, I decided to deepen my studies of cellular signaling in health and disease and joined the laboratory of Dr. David Sabatini at the Massachusetts Institute of Technology (MIT) in Cambridge, MA. In the Sabatini lab, I developed novel biochemical techniques to understand how cells in our body can measure the amount of nutrients available to sustain their growth, and I investigated how aberrant ‘nutrient sensing’ may drive the unrestrained proliferation of cancer cells. This work was supported by a Jane Coffin Childs Postdoctoral fellowship, and resulted in several publications in the journals *Cell*, *Science* and *EMBO Journal*. In January 2014 I started my own independent research group at the University of California, Berkeley, where we are combining advanced microscopy, biochemistry and gene editing to uncover novel mechanisms of metabolic regulation. Our work, which has implications for cancer, aging and type-2 diabetes, is supported by numerous grants including the NIH Director’s New Innovator Award, the Pew-Stewart Scholarship for Cancer Research and the Damon Runyon-Rachleff Innovation Award.

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