Senato della Repubblica

Camera dei Deputati

UNDER THE AUSPICES OF THE

Presidenza della Repubblica

Senato della Repubblica

Camera dei Deputati

Presidenza del Consiglio dei Ministri

Ministero degli Affari e della Cooperazione Internazionale

Ministero della Difesa

Ministero della Salute

Ministero dell'Interno

CENTRO NAZIONALE RICERCA

Istituto Superiore della Sanita'

State of Texas Governor

COM.IT.ES
Comitato degli Italiani all'Estero
Committee for Italians Abroad

In cooperation with

Consulate General of Italy in Houston

Presents:

THE 10th CONFERENCE OF ITALIAN RESEARCHERS IN THE WORLD

December 6th, 2014

Italian Consulate Auditorium

1330 Post Oak Blvd

Houston, Texas 77056

Messaggio del Chairman

Cari Connazionali e Partecipanti alla X Conferenza dei Ricercatori Italiani nel Mondo, desidero rivolgere il benvenuto a nome di tutto il Comitato per gli italiani residenti all'estero, Comites Circoscrizione Consolare di Houston.

Quest'anno celebriamo il decimo anniversario. Risultato raggiunto grazie all'impegno costante, alla passione e tenacia del Comites e dei componenti il Comitato Organizzatore scientifico guidati dal Direttore Dr.Duchini, che in collaborazione con Il CTIM ed il Consolato Generale d'Italia a Houston nel corso di tutti questi anni, hanno saputo organizzare e promuovere un evento atteso e diventato tra i fiori all'occhiello a livello Internazionale.

Le lettere di apprezzamento e di riconoscimento rivolte ai nostri Validi Ricercatori ed a questa manifestazione, sono la testimonianza concreta di un rispetto, stima e di alta considerazione da parte delle piu' alte Autorita' Italiane e Texane.

Era il 9 Ottobre del 2005 ,quando veniva inugurata a Dallas la prima manfestazione con titolo "il Passato –Presente e Futuro" con 6 speakers ed un odience di circa 120 partecipanti, in occasione delle festivita' del Columbus Day.

A distanza di 10 anni ,il numero dei presentatori alla conferenza sono arrivati nell'ordine delle centinaia,il networking si e' incrementato notevolmente, le collaborazioni e le cooperazioni sono state messe in campo ed attive, opportunita' a tutti i livelli e soprattutto si e' venuto a creare un momento che al di la' dell'aspetto tecnico scientifico e di ricerca , viene condiviso da tutti i partecipanti e cioe' poter dare il proprio contributo da Italiani e da Italo-Americani e sentirsi parte a tutti gli effetti di un obiettivo comune.

Ma dobbiamo pensare sempre di fare meglio e di piu' prendendo le buone cose fatte nel passato.

Anche quest'anno e' prevista la partecipazione di personalita' di spicco che si sono distinte nei propri settori di competenza, dalla Medicina all'Ingegneria, dalla Energia all'Aerospazio, dalla Fisica agli Studi umanistici, ma anche di operazioni che riguardano la solidarieta`, dove gli Italiani si sono sempre fatti valere.

Personalita' eccezionali e meritevoli ,cosi come tutti i partecipanti che presenteranno i propri lavori tramite l'edizione di questo libro.

Vogliamo onorare e celebrare assieme ai nostri connazionali i protagonisti della ricerca perche' continuano a dare un notevole contributo alla crescita culturale, scientifica ed economica per il progresso in America e nel Mondo .

Sono convinto che da questa edizione speciale si svilupperanno ulteriori progetti di cui ne potranno beneficiare non solo i Ricercatori, ma il sistema Italia.

Da evidenziare la presenza di giovani studenti delle scuole medie inferiori e superiori , vincitori di un premio letterario promosso dal Comites con il Consolato Generale in occasione della XIV settimana della lingua italiana nel mondo con titolo: Editoria Italiana Autori e Lettori nell'era digitale.

Desidero ringraziare tutto il comitato ed i collaboratori per avere avuto sin dalla nascita il privilegio di poter contribuire ad un evento di cosi alto significato.

Con profonda Stima e Rispetto,
Com.Te.Vincenzo Arcobelli
Presidente Comitato per gli italiani all'estero

Dear Participants,

Welcome to the Tenth edition of our conference. This year we celebrate 10 years of Italian Research in the World. We will have a live connection with the Italian Research Station in the Himalaya, as well as with the International Space Station where our first female Italian astronaut, Samantha Cristoforetti, is working at this very moment. World renowned archeologist and writer Valerio Manfredi will present his new book, while astronaut Luca Parmitano will share his experience of a prolonged flight in space. We will talk about new materials, invisibility, nanotechnology, of how Italian companies used the newest technology to save the "Concordia".

Numerous researchers and scientists from different fields and prestigious Institutions will describe today their research and their discoveries. They are too many to mention by name in my message but you'll find their activities and their biographies in this book. They are all outstanding representatives of their field of research.

We are proud that for ten years we have been able to put together so many Italians and Italian-Americans in a conference that highlight the collaborations between our two Nations. And we are particularly proud that this year the city of Houston decided to recognize their work and dedicated this day to Italian Researchers in the World. My deepest thanks go to our Mayor Annise D. Parker and to city representative Oliver Pennington. Thanks to all of you who dedicated time and passion to this conference.

Best wishes for a productive meeting.

Sincerely

Andrea Duchini, MD, FACP

STATE OF TEXAS
OFFICE OF THE GOVERNOR

Greetings:

As Governor of Texas, I am pleased to welcome you to the 10th Conference of Italian Researchers in the World.

Texas boasts a population of dedicated, innovative and highly skilled people from all walks of life, each of whom contributes to our state's economic success. Italians and Italian-Americans have played an important role in the prosperity and diversity of our state. I commend everyone working to promote valuable cultural exchange, research opportunities and trade between Texas and Italy.

This forum provides you with opportunities to network, share expertise and discuss ways to meet the demands of the future. Communities across Texas, in Italy and around the world will benefit from your work. I have every expectation that this conference will be a great success.

First Lady Anita Perry joins me in sending best wishes for an enjoyable and informative conference.

Sincerely,

Rick Perry

Rick Perry
Governor

Proclamation

Italian Researchers in the World

10th Annual Conference

WHEREAS, each year, the Committee for Italians Living Abroad (COMITES) in cooperation with the Committee Tricolor for the Italians in the World (CTIM), and under the auspices of the Consulate General of Italy in Houston, organizes a conference in recognition of the many achievements and contributions made to American culture by persons of Italian heritage; and,

WHEREAS, the **Conference of Italians Researchers in the World** celebrates the many achievements and successes of Italian Americans, especially in the sciences, aerospace, medicine, high technology, commerce and humanities, as well as the impact that Italian culture and language continue to have on our lives; and,

WHEREAS, on December 6, 2014, the 10th Conference of **Italian Researchers in the World** will take place at the auditorium of the Consulate General of Italy in Houston. The City of Houston commends and congratulates the organizers and participants of the **Conference of Italian Researchers in the World** for their efforts to honor Italian Americans locally and extends great appreciation to Houston's Italian American community for their many contributions.

THEREFORE, I, Annise D. Parker, Mayor of the City of Houston, hereby proclaim December 6, 2014, as

Italian Researchers in the World Day

10th Annual Conference

in Houston, Texas.

In Witness Whereof, I have hereunto set my hand and have caused the Official Seal of the City of Houston to be affixed this 20th day of November, 2014.

Annise D. Parker
Mayor of the City of Houston

CITY OF HOUSTON

Annise D. Parker
Mayor

P.O. Box 1562
Houston, Texas 77251-1562

Telephone – Dial 311
www.houstontx.gov

December 6, 2014

Greetings!

I am delighted to extend a warm welcome to all participants of the **10th Conference of Italian Researchers in the World**, organized by the Committee for Italians Abroad and the Consulate General of Italy in Houston.

Houston is an entrepreneurial-minded city that attracts talent from around the globe in a variety of key industries. Houstonians take great pride in our diversity and the strength this brings to our community, including our leadership in energy, medicine and technological advancements. We recognize and appreciate the contributions of citizens of Italian heritage to our city's success.

Please accept my best wishes for a productive conference and a pleasant stay in Houston.

Sincerely,

Annise D. Parker
Mayor

Protocollo :SGPR 17/10/2014 0097322 P

Il Consigliere Diplomatico
del Presidente della Repubblica

Roma, 17 ottobre 2014

Caro Presidente,

desidero rivolgere a nome del Signor Presidente della Repubblica un caloroso saluto a tutti i partecipanti alla "*X Conferenza dei Ricercatori Italiani nel Mondo*", organizzata grazie al consueto impegno del locale COMITES.

Il Capo dello Stato ha ben nota l'importanza della manifestazione giunta alla sua decima edizione che, attraverso l'interazione fra scienziati di tutte le discipline, contribuisce efficacemente alla valorizzazione ed alla diffusione della cultura scientifica italiana. La Conferenza rappresenta, inoltre, una preziosa occasione per valorizzare il lavoro dei nostri talenti operanti in Arkansas, Louisiana, Oklahoma e Texas.

Nella certezza che, anche quest'anno, la Conferenza segnerà un momento importante per l'Italia e per i suoi ricercatori, mi è gradita l'occasione per far pervenire i cordiali saluti del Capo dello Stato a tutti gli organizzatori e agli illustri partecipanti, cui volentieri unisco i miei personali.

A. Zanardi Landi

Antonio Zanardi Landi

Dottor Vincenzo Arcobelli
Presidente Com.It.Es.
Circoscrizione Consolare di Houston
7684 Green Meadow Ct.
Flower Mound, Texas
75022 - USA
atexpress@yahoo.com

Senato della Repubblica
Il Presidente

Roma 17 ottobre 2014
prot. gab 7489/2014

Gent.mo Presidente,

è con molto piacere che ho accolto l'invito ad intervenire idealmente alla decima edizione *della* ***"Conferenza dei Ricercatori nel Mondo"***, organizzata dal Comites di Houston che avrà luogo presso l'Auditorium del Consolato Generale d'Italia il 6 dicembre prossimo.

Purtroppo concomitanti impegni istituzionali non mi consentiranno di essere presente ma desidero augurare un fruttuoso dibattito, nella convinzione che la ricerca scientifica sia necessaria per arricchire la nostra conoscenza del presente e le nostre prospettive del futuro.

Desidero far giungere a tutti il mio sostegno istituzionale a questa iniziativa che Vi vede riuniti per favorire un costruttivo confronto nel campo del mondo scientifico su un tema di grande attualità quale la ricerca. La scienza,indispensabile ed importante mezzo per lo sviluppo ed il progresso incide notevolmente sulla costruzione di un futuro migliore per tutti i Paesi del mondo ed i suoi cittadini. Uno degli obiettivi primari che il nostro Paese, l'Italia, deve perseguire, è quello di valorizzare la ricerca, inserendo nel mondo del lavoro professionisti competenti e capaci, in grado di affermarsi nel campo delle Scienze Biomediche, della Medicina, della Fisica, dell'Ingegneria e di tutte le altre attività collegate e, sono profondamente convinto che, questa Conferenza costituirà un momento importante per gli scambi tra i ricercatori e la Comunità italo- americana .

Augurando ancora pieno successo all'iniziativa gradita è l'occasione per inviare a tutti i migliori saluti.

Dott. Vincenzo Arcobelli

CR/cr

LA PRESIDENTE DELLA CAMERA DEI DEPUTATI

Vincenzo Arcobelli
Presidente COM.IT.ES
Circoscrizione Consolare di Houston

Messaggio

E' con grande piacere che rivolgo il mio saluto più cordiale a tutti i partecipanti alla Decima Conferenza dei Ricercatori Italiani nel Mondo che si svolgerà a Houston il 6 dicembre.

La vostra realtà, impegnata a valorizzare le eccellenze italiane nel campo della cultura scientifica rappresenta un'esperienza cui far positivamente riferimento. E' proprio infatti nei momenti di maggiore difficoltà economica e sociale, come quello che stiamo vivendo, che il Paese deve poter riscoprire e promuovere la sua grande tradizione di intellettualità, progettualità e innovazione.

Mi fa piacere apprendere che vi siano tanti ricercatori connazionali che sperimentano all'estero le loro conoscenze scientifiche, ma sarei ancor più felice nel sapere che in Italia vi siano tutte le condizioni per attrarre intelligenze e talenti e dare anche a voi concrete prospettive professionali. Una delle sfide che il nostro Paese si trova a fronteggiare è proprio quella di tradurre le competenze più innovative in energia vitale per la ripresa.

Ne consegue che, mai come oggi, la politica e le Istituzioni debbano promuovere investimenti nella ricerca e nell'innovazione, perché è proprio nella capacità di proiettarsi nelle sfide del futuro che risiedono le premesse per riconquistare solide posizioni di prestigio e di eccellenza e per favorire il superamento delle fasi di crisi economica.

Nell'esprimere quindi un convinto incoraggiamento a proseguire nell'attività svolta, a tutti Voi giunga il mio auspicio per il pieno successo dell'evento, unitamente ad un sincero augurio di buon lavoro.

Laura BOLDRINI

Il Ministro della Difesa

Roma, 5 novembre 2014

Egregio Presidente,

desidero far giungere il mio più cordiale saluto a Lei e a tutti i partecipanti alla X edizione della Conferenza 'Ricercatori Italiani nel mondo', che si terrà il 6 dicembre prossimo a Houston.

Questa prestigiosa iniziativa rappresenta ormai da anni un'occasione di incontro e confronto tra scienziati e ricercatori italiani che, per motivi diversi, hanno scelto di intraprendere la loro carriera accademica all'estero, distinguendosi per competenza e stimolando sinergie e collaborazioni con i colleghi che operano in Italia.

Il loro impegno nei settori scientifici più disparati e l'unanime apprezzamento che ne deriva da parte della comunità scientifica internazionale, ci restituiscono appieno la coscienza di quanto, in termini di civiltà e progresso, i nostri connazionali hanno fatto e continuano a fare nel mondo, esprimendo un'eccellenza che è motivo di orgoglio per l'Italia.

Nel rinnovare il mio apprezzamento per questa iniziativa e per il significativo e costante supporto offerto dal Com.It.Es. alle comunità italiane all'estero, auguro a Lei e a tutti coloro che interverranno alla Conferenza il pieno successo della manifestazione.

Sen. Roberta Pinotti

Dott. Vincenzo Arcobelli
Presidente del COM.IT.ES
7684 Green Meadow Ct.
Flower Mound, Texas 75022 USA

MODULARIO INTERNO - 5

MOD. 5 G

Ministero dell'Interno

DECIMA CONFERENZA DEI RICERCATORI ITALIANI NEL MONDO

6 DICEMBRE 2014

presso l'Auditorium del Consolato Generale d'Italia a Houston in Texas

INDIRIZZO DI SALUTO DEL MINISTRO DELL'INTERNO

Sono particolarmente grato per l'invito, in qualità di Ministro dell'Interno e di cittadino italiano, a partecipare alla Decima Conferenza dei Ricercatori Italiani nel mondo che si terrà a Houston in Texas il 6 dicembre 2014.

Anche se gli impegni istituzionali mi impediscono di essere presente all'evento, tuttavia sono molto lieto di poter far giungere un caloroso saluto agli organizzatori e a tutti i partecipanti a questo importante workshop, dedicato ai ricercatori italiani nel mondo: sono l'espressione all'estero dell'Italia, nella sua identità, nei suoi valori storici e nelle ricchezze culturali.

Questo incontro è l'occasione per condividere nuovi progetti frutto di sinergie, studi ed approfondimenti, con un obiettivo comune: sviluppo e benessere.

Io credo nei ricercatori e nella loro valorizzazione, e a loro va la mia considerazione e stima.

Il contributo che gli studiosi offrono alla collettività, attraverso nuovi strumenti e strategie, in una società sempre più competitiva e

Ministero dell'Interno

globalizzata, deve rappresentare un esempio per i giovani affinché possano approfondire gli studi e perseguire le loro ambizioni. Noi, invece, abbiamo il dovere di creare le condizioni per far crescere il merito e le capacità individuali.

È, quindi, necessario rilanciare il valore della ricerca, in ogni ambito scientifico ed umanistico, come paradigma di uno sviluppo consapevole e libero. Il numero di giovani neolaureati e neodottorati a lavoro nelle università e nei centri di ricerca di altri Paesi è una testimonianza del valore dei nostri istituti d'istruzione.

Ma noi dobbiamo fare di più, sostenendo ancora maggiormente la ricerca nel nostro Paese, affinché possa sempre meglio rappresentare quell'"eccellenza" che ci fa apprezzare in tutto il mondo.

Esprimo, quindi, l'augurio più sincero affinché questo incontro possa rappresentare per tutti un momento di riflessione e un punto di partenza per nuove idee e stimolanti contributi.

Da parte mia, con estremo interesse, non mancherò di seguire gli sviluppi e le future iniziative.

Angelino Alfano

MODULARIO
Salute - 18

MOD. 18

Ministero della Salute

Ufficio di Gabinetto

Ministero della Salute
GAB
0008525-P-22/10/2014

147979294

Comm. Vincenzo Arcobelli
Presidente Comites Houston
Texas
75022 U.S.A.

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e, p.c.
Presidenza Consiglio Ministri
Ufficio del Cerimoniale
Roma

uce.patrocini@palazzochigi.it

Con riferimento alla richiesta, pervenuta allo scrivente Ufficio, si comunica la concessione del patrocinio del Ministero della Salute alla "X conferenza dei ricercatori italiani nel mondo", in programma a Houston Texas il 6 dicembre p.v..

Si formulano i migliori auguri per la riuscita dell'iniziativa.

Il Dirigente

FG/fg

Istituto Superiore di Sanità

IL COMMISSARIO

00161 ROMA 08/10/2014

VIALE REGINA ELENA 299

PRE-C-749/14

Comm. Vincenzo Arcobelli
Presidente Comites Houston
7684 Green Meadow Ct
Flower Mound, Texas 75028
U.S.A.

Gentile Presidente,

ho molto gradito il Suo cortese invito alla "*Decima Conferenza dei Ricercatori Italiani nel Mondo*", che si svolgerà a Houston il 6 dicembre p.v.

Sono spiacente di comunicarLe che i numerosi impegni istituzionali connessi al mio recente ruolo di Commissario dell'Istituto Superiore di Sanità non mi consentiranno di essere presente.

Sono lieto di assicurare il patrocinio dell'Istituto Superiore di Sanità a questo importante e prestigioso evento, che anche quest'anno sottolinea l'importanza di sostenere lo scambio interculturale e il confronto in ambito internazionale, di stimolare l'innovazione e valorizzare i preziosi talenti presenti tra i nostri ricercatori residenti all'estero, che operano in settori diversi ma che sono tutti accomunati dalla medesima volontà di favorire la trasmissione dei nuovi risultati della ricerca al mondo produttivo.

Augurando all'evento il meritato successo, mi è gradita l'occasione per porgere i miei più sinceri auguri di un sereno e proficuo lavoro a Lei e a tutti i partecipanti all'evento.

Con molti cordiali saluti.

Walter Ricciardi

L'Ambasciatore

Ambasciata d'Italia
Washington
4306

28 ottobre 2014

Caro C.te Arcobelli,

desidero esprimere le mie più vive felicitazioni per la prossima Conferenza dei Ricercatori Italiani nel Mondo, una riunione che è cresciuta negli anni e che, giunta ora alla sua decima edizione, si conferma un importante appuntamento per la comunità dei ricercatori e degli studiosi italiani nel mondo.

La conferenza offre l'occasione di poter apprezzare l'ottimo lavoro che i molti ricercatori italiani conducono in tutte le discipline, e allo stesso tempo fornisce un momento di incontro con colleghi americani, celebrando i legami di lunga data fra i nostri Paesi. Tutto cio' in un contesto come la città di Houston, uno dei prominenti centri di ricerca degli Stati Uniti, alla cui prestigiosa rete di iniziative contribuiscono numerosi nostri connazionali.

Purtroppo concomitanti impegni mi impediscono di poter partecipare personalmente.

Nel ringraziare vivamente Lei ed il comitato organizzatore, e nell'esprimere il mio sincero apprezzamento per l' iniziativa, formulo i migliori auguri di buon lavoro.

Con i miei migliori saluti,

Claudio Bisogniero

Com. Vincenzo Arcobelli
Presidente
Comites di Houston
DALLAS

2014 Italian Presidency of the Council of the European Union

Il Console Generale d'Italia
Houston

E' con grande piacere che presento il mio saluto ai partecipanti alla Conferenza dei Ricercatori italiani nel mondo. Il fatto che questa manifestazione, organizzata dal Comites della circoscrizione di Houston con il sostegno del Consolato Generale, sia giunta quest'anno alla sua decima edizione, è segno evidente della sua vitalità e della sua capacità di fungere da polo di attrazione per i rappresentanti della ricerca italiana in quest'area degli Stati Uniti, che con il loro straordinario lavoro ed i risultati ottenuti onorano profondamente il nostro Paese.

Il riconoscimento del ruolo fondamentale svolto dai nostri ricercatori in numerosi settori chiave è stato, del resto, manifestato esplicitamente dalle massime Autorità della città di Houston e dello Stato del Texas, che beneficiano grandemente di tale contributo.

Come per le precedenti edizioni, lo scopo dell'iniziativa è evidenziare il grande apporto della ricerca italiana nei più diversi settori, contribuendo così a promuovere un'immagine dinamica ed aggiornata del nostro Paese. Lo spirito di questa edizione, tuttavia, è - ancor più che in passato - anche quello di avvicinare i cittadini alla ricerca e ridurre la distanza tra i mondi della ricerca scientifica e quella umanistica, spesso percepiti come in contrapposizione.

La crescita di questa Conferenza nel corso degli anni costituisce certamente un modello di collaborazione tra le Istituzioni ed i soggetti che rappresentano il nostro Paese all'estero e contribuisce ad evidenziare la profondità delle relazioni tra Italia e Stati Uniti anche in campo scientifico.

Mi è gradita l'occasione per rivolgere a tutti voi i miei migliori auguri di buon lavoro.

Elena Sgarbi

Elena Sgarbi

Consiglio Nazionale delle Ricerche

IL PRESIDENTE

Dott. Vincenzo Arcobelli
Presidente
COM.IT.ES
Comitato degli Italiani all'Estero
Flower Mound, Texas
75022 U.S.A

atexpress@yahoo.com

Pregiatissimo Presidente,

faccio seguito alla Sua richiesta per confermarLe il patrocinio non oneroso del Consiglio Nazionale delle Ricerche alla Decima Conferenza dei Ricercatori Italiani nel Mondo che si terrà a Houston – Texas il 6 Dicembre 2014.

Nell'augurare il massimo successo all'iniziativa, colgo l'occasione per porgere i migliori saluti.

Prof. Luigi Nicolais

Presidenza del Consiglio dei Ministri
COMITATO NAZIONALE PER LA BIOSICUREZZA,
LE BIOTECNOLOGIE E LE SCIENZE DELLA VITA
IL PRESIDENTE

Al Signor Comandante Vincenzo Arcobelli
Presidente del COM.IT.ES
Circoscrizione consolare di Houston

Gent.mo Presidente Arcobelli,

a nome del Comitato Nazionale per la Biosicurezza, le Biotecnologie e le Scienze della Vita (CNBBSV) della Presidenza del Consiglio dei Ministri, desidero esprimerLe la nostra più sincera considerazione per l'impegno con cui porta avanti da anni l'organizzazione della Conferenza dei Ricercatori Italiani nel Mondo sotto le prestigiose insegne del Comitato degli Italiani all'Estero.

È motivo di orgoglio, e ritengo doveroso, sottolineare come i nostri connazionali impegnati nell'ambito della ricerca in qualsiasi settore, da sempre hanno contribuito all'avanzamento culturale e al progresso scientifico e tecnologico, dando lustro al nostro Paese in ogni parte del mondo.

Sono certo che anche quest'anno, in occasione della 10ma edizione della Conferenza, i partecipanti sapranno dare spunto a nuove riflessioni e progetti comuni utili al benessere collettivo.

Augurando pieno successo ai lavori, agli organizzatori tutti e a quanti saranno presenti, l'occasione mi è gradita per porgerLe i saluti del CNBBSV, ai quali unisco i miei personali.

Leonardo Santi
Presidente Onorario, Comitato Nazionale per la Biosicurezza, le Biotecnologie e le Scienze della Vita
Presidente, Consiglio Scientifico del Centro Nazionale per le Risorse Biologiche

Carissimo Presidente Arcobelli,

a nome di tutti i ricercatori dell'Istituto Euro-Mediterraneo di Scienza e Tecnologia di Palermo con la presente desidero manifestare i sensi della mia più profonda stima al Comitato Organizzatore della X Conferenza dei Ricercatori Italiani nel mondo per l'alta missione scientifica, culturale e sociale che portate avanti da diversi anni attraverso l'organizzazione di questo importante evento sotto le prestigiose insegne del Comitato per gli Italiani all'Estero.

Siamo infatti sempre più profondamente convinti che, in un tempo di forte crisi morale, politica ed economica come quello in cui viviamo, la cultura e la ricerca scientifica possono rappresentare un elemento di rinascita dei valori umani e sociali nei nostri popoli.

Il lavoro da Voi svolto assume ancora più importanza visto lo spessore delle personalità e delle Istituzioni coinvolte. Con la Vostra iniziativa date un contributo all'affermazione di una cultura meritocratica, attraverso la valorizzazione delle intelligenze più vive, gettando inoltre i semi per la creazione di reti di eccellenza tra ricercatori operanti in realtà geo-economiche lontane.

Siamo lieti di poterVi dare anche quest'anno il nostro modesto contributo, attraverso la partecipazione di alcuni nostri ricercatori, al successo di questa iniziativa.

Buon lavoro a tutti!

Palermo, 31 ottobre 2014

Il Presidente

On. Prof. Bartolomeo Sammartino

Istituto Euro-Mediterraneo di Scienza e Tecnologia
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ERSU PALERMO
Ente Regionale per il Diritto allo Studio Universitario

GRANTS FOR UNIVERSITY OF WESTERN SICILY

Il Presidente

Gentili signori e signore,

è con sincero piacere che mi trovo a Houston per rivolgere il mio personale saluto e quello dell'Ersu, l'ente regionale che si occupa di garantire il diritto allo studio agli studenti universitari più meritevoli e bisognosi.

Un particolare plauso va a chi ha organizzato la decima Conferenza dei ricercatori italiani nel mondo, in particolare il Comites di Houston, e al Consolato generale d'Italia che ha dato il patrocinio. L'iniziativa è diventata, ormai, un appuntamento importante, non solo per la comunità scientifica ma anche per l'orgoglio degli italiani nel mondo.

Ricerca e progresso scientifico sono un binomio imprescindibile se si vuole realmente garantire sviluppo economico e benessere a tutti i cittadini. Lo dimostra la storia economica degli Stati Uniti e di alcuni altri paesi che investono e hanno investito sempre più nel settore della ricerca. Auspico che l'esempio dell'impegno profuso dagli Stati più lungimiranti nello stimolare e sostenere il settore della ricerca, possa diventare un modus operandi anche per l'Italia, affinché si pongano in essere politiche incentivanti per il ritorno di uomini e donne che hanno cercato la propria realizzazione altrove nel campo della ricerca.

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ERSU PALERMO
Ente Regionale per il Diritto allo Studio Universitario

GRANTS FOR UNIVERSITY OF WESTERN SICILY

Mi auguro che la manifestazione di oggi possa far crescere, intanto, tutte le attività di partenariato scientifico già avviate. Palermo e Houston in questi ultimi quattro anni si sono avvicinate sempre più; la Sicilia e il Texas stanno collaborando alacremente, ed è stato istituito congiuntamente un apposito dottorato internazionale di ricerca.

L'impegno profuso sino a ora ha dato dei frutti importanti, grazie alla collaborazione di tanti italiani trasferitisi in Texas - tra Galveston e Houston -come Luca Cicalese, Cristiana Rastellini, Giulio Taglialatela, Adelaide Micci, Nicola Abbate, Fabio Triolo, Ryan Calabretta.

L'Ersu di Palermo, tiene al rilancio di questo rapporto, sapendo che abbiamo la possibilità di avere un volano per l'intensificarsi delle relazioni, grazie alla disponibilità logistica, consentendo di moltiplicare i rapporti di partenariato e di scambio tra la comunità scientifica e tra gli studenti universitari che gravitano nelle istituzioni universitarie della Sicilia e del Texas.

Un ringraziamento porgo, infine, anche alla Confederazione Siciliani Nord America che ha favorito lo sviluppo di questi rapporti e che potrà fare da ponte anche per lo sviluppo di altre iniziative analoghe.

Dalla parte nostra, a favore di questa partita, c'è la storia di tanti italiani, di cui molti siciliani, che, benché oggi americani, portano un cognome che racconta la loro storia e la loro provenienza. Questo elemento potrà favorire, certamente, il rilancio dei rapporti. E noi vogliamo offrire anche a questi italiani la possibilità di riprendere il bandolo di un gomitolo che li riporti alle origini. Al contempo, sarà l'occasione giusta per "contaminare" chi sta in Sicilia attraverso percorsi di eccellenza condotti in Texas che possano fungere da stimolo per una diversa, più forte, cultura dello sviluppo scientifico ed economico.

Prof. Alberto Firenze

Presidente Ersu Palermo

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Comitato Tricolore per gli Italiani nel Mondo

Associazione fondata nel 1968 da Mirko Tremaglia

Via della Mercede, 27 – 00187 Roma
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MESSAGGIO DELL'ON. ROBERTO MENIA
IN OCCASIONE DELLA
X CONFERENZA DEI RICERCATORI ITALIANI NEL MONDO
Houston, 6 dicembre 2014

Cari Amici,

è con grande piacere e interesse che porgo il mio saluto e plauso, unitamente all'auspicio di buon lavoro, alla **X Conferenza dei Ricercatori Italiani nel mondo** di Houston.

Considero questa un'iniziativa particolarmente utile e significativa, perché nata in un contesto di grande apertura e ricchezza culturale, lontana dalla retorica parolaia sull'emigrazione ed invece fortemente ancorata alle sfide dell'oggi, capace insomma di indicare strade utili alla crescita del "sistema Italia" nell'era della globalizzazione.

Questa Conferenza costituisce, in tal senso, una preziosa occasione per rinnovare ogni anno il rapporto tra i ricercatori italiani all'estero ed i loro colleghi in Italia. Si tratta di incontri che favoriscono intese, sinergie, contatti, progetti, scambi e che avvicinano sempre più le "due Italie" in un comune progetto di sviluppo del mondo della ricerca.

Ringrazio il COM.IT.ES e tutto il Comitato Organizzatore che hanno contribuito alla realizzazione di questa X Conferenza.

Il decennale è un ulteriore e significativo traguardo per questa Conferenza, ma non ho dubbi che altri ne seguiranno.

Desidero in conclusione ed una volta ancora salutare calorosamente tutti gli intervenuti e, in particolare, i ricercatori italiani e di origine italiana che, grazie al loro impegno ed al loro ingegno, portano lustro alla nostra amata Patria.

On. Roberto Menia
Segretario Generale
Comitato Tricolore per gli Italiani nel Mondo

Mayor Parker is Houston's 61st mayor and one of only two women to hold the City's highest elected office. As the City's chief executive officer, she is responsible for all aspects of the general management of the City and for enforcement of all laws and ordinances.

Parker has spent many years in service to the people of Houston, with six years as a City Council member and six years as City Controller. She is the only person in Houston history to hold the offices of council member, controller and mayor.

The mayor's tenure includes passage and implementation of Rebuild Houston, a pay-as-you-go comprehensive street and drainage improvement program that will provide jobs for Houstonians for years to come; voter approval of a $410 million public improvement bond program; creation of an independent organization to oversee the City's crime lab operations; a unique sobering center for public intoxication cases; adoption of a long-term financial plan that ensures the stability of the City's water department and reorganization of City departments to achieve cost savings and more efficient operations. She created a new City department focused on the needs of neighborhoods and the Office of Business Opportunity to help minority and women-owned small business enterprises compete for City contracts. Additionally, she won City Council approval of a Historic Preservation Ordinance that, for the first time, provides real protection for historic properties in City-designated historic districts and she issued one of the most comprehensive non-discrimination orders in the nation.

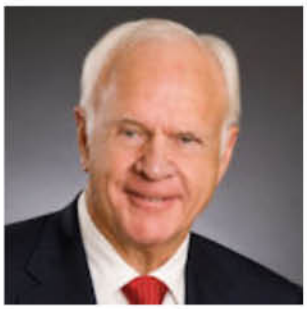
Fast Company magazine selected Houston as City of the Year for 2011 and in 2010, Time magazine named Mayor Parker one the 100 most influential people in the world. She has also been the recipient of numerous awards during her career, including the 2011 Guardian of the Bay Award from the Galveston Bay Foundation, Scenic Houston's 2010 Scenic Visionary Award and the 2010 Guardian of the Human Spirit Award from the Holocaust Museum Houston.

In addition to her duties as mayor, Parker is a member of President Obama's Task Force on Climate Preparedness and Resilience, chairs the U.S. Conference of Mayors Criminal and Social Justice Committee, serves as a member of the U.S. Department of Homeland Security Secretary's Advisory Council and on the boards of the Texas Environmental Research Consortium and Houston Galveston Area Council. She is an advisory board member of the Holocaust Museum, Center for Houston's Future and Montrose Center.

Mayor Parker is a second generation native Houstonian. She graduated from Rice University with a Bachelor of Arts Degree. In the private sector, Parker spent 20 years working in the oil and gas industry, including 18 years with Mosbacher Energy Company. She also co-owned a retail bookstore for 10 years.

Parker and her wife Kathy Hubbard have been together for more than 23 years and are advocates for adoption, with three daughters and a son.

Oliver Pennington



Oliver Pennington's life is one of education, hard work, dedication and achievement. Born and raised in Houston, he loves this city and everything it has to offer. Oliver achieved great success at a very young age. He graduated in 1960 from Rice University. From there he went on to law school at the University of Texas. He graduated in 1963.

During that time he was an Associate Editor of the Texas Law Review. He married in 1968 to Beverly Buzzini and together they raised two children right here in District G, Oliver Pennington III and Sarah Pennington Tropoli. Oliver currently has 5 grandchildren.

Upon graduation, he took a job at the local firm of Fulbright & Jaworski, LLP. He quickly became a partner and took on that role from 1973 to 2002. Oliver's practice included municipal finance, municipal law, municipal utility district law (where he attended monthly meetings of boards which dealt with water, sanitary sewage, drainage, security, solid waste services and other similar neighborhood issues), environmental and administrative law.

Oliver is the former Chairman of the Houston Civil Service Commission. He was a member of Board of the Memorial Park Conservancy for five years, which is right in the heart of District G. He is also a member of the Houston Bar Association. He is a member of the Greater Houston Partnership where he is or has been a member of the Water Laws Committee and the Environmental Committee and the Economic Development Committee. Oliver was also a member of the Board of Directors of North Houston Association, a trade group advocating public policy and economic development policies favorable to that area.

Oliver has been involved in the community at many different levels, particularly at the neighborhood level because of his municipal utility district law practice. He has been

successful and is now ready to give back to his community and the city of Houston by serving as Councilmember for District G.

Mr. Pennington has been appointed by Mayor Annise D. Parker to participate as a member of the following City Council Committees:

- Budget & Fiscal Affairs
- Ethics, Elections & Council Governance
- Housing, Sustainable Growth and Development
- Public Safety
- Quality of Life
- Transportation, Technology & Infrastructure (Vice-Chair)

Program

Dec 6th 2014

9AM-6PM

9;00-9:30

National Anthems and Welcome Messages

Andrea Duchini, Comites Texas

Valter Della Nebbia, Councilor CGIE

Vincenzo Arcobelli, Conference Chairman, President Comites

Elena Sgarbi, Italian Consul General, Houston

"Ten years of Italian research" by Andrea Duchini

9:30-10:00

Keynote lecture

Moderator; Stefano Sdringola

Paolo Angelini, Texas Heart Institute

10:30-11:00

International PhD Program, UTMB-Universita' di Palermo; 2014 update

Moderators; Luca Cicalese, Francesco Cappello

Giampiero La Rocca

Wharton's jelly stem cells: their journey from umbilical cord to the diseased organs. Defining the in vivo role and uncovering their therapeutic potential

Pier San Biagio

The biophysics @ Palermo; From neurodegenerative diseases to food technology

11;00-11;15AM

Introduction Authorities and Welcome Remarks;

Vincenzo Arcobelli, Conference Chairman, President Comites

Oliver Pennington, City of Houston, Council Member

Elena Sgarbi, Italian Consul General, Houston

Leoluc Orlando, Sindaco, Citta' di Palermo

Moderators;

Fabio Triolo

Tiziana Triolo

"Saluto ai partecipanti" dalla sala delle Aquile del Comune di Palermo

Ludovico Gippetto

"La fuga del Caravaggio; Cronaca di un furto annunciato"

11;15AM-12;00PM

Innovations in Research

Chairman; Paolo Papi, Giulio Taglialatela

Andrea Alu'

On Invisibility Cloaks and Other Metamaterial Tricks with Waves

Brando Ballerini

Saving the Concordia

Antonio Giordano

Oncology Research at the Sbarro Institute of Philadelphia

12:00-1:00 PM

Lunch and poster session

1:00-3:45 PM

New frontiers of research

Chairman: Orazio Chiarenza, Francesco Fusco, Gustavo Priotto

"Ali per Volare", Italian Missionary Activity in Central Africa - Rino Martinez

The Pyramid International Laboratory/Observatory - Laxman Adikhari, Elisa Vuillermoz

Aerospace

Remote sensing from the International Space Station – Mario Runco

High Definition Earth Viewing – Susan Runco

Anna Fisher, NASA

School research projects to the International Space Station

CASIS National Design Challenge Projects from The Awty International School – Angela Glidewell

United Space School 2014 – Federico Andreozzi

"Futura" – Samantha Cristoforetti's Mission Highlights

Questions and answers

3;45-4;00PM

HISD Program; Italian as Foreign Language. Award Ceremony

Elena Sgarbi, Italian Consul General, Houston

Valter Della Nebbia, Councilor CGIE

Alex Di Bagno, Councilor, Comites Texas

Rita Fraschini, Councilor, Comites Texas

Marina Mocci, Cultural Attache', Consulate General of Italy

4;00-5;00PM

Italian Literature

Moderators; Maria Wells, Moira Di Mauro-Jackson, Francesca D'Alessandro Behr

Keynote speaker:

Valerio Massimo Manfredi

"Meraviglie del Mondo Antico"

5;00-6;00PM

Round Table

"Research Funding; Present and Future"

Moderators; Cristiana Rastellini, Davide Cattano

Gian Maria Busulini, Italian Embassy, Washington

Patrizia Livreri, Universita' di Palermo

Ennio Tasciotti, The Methodist Research Institute, Houston

Discussants; Vincenzo Arcobelli, Luca Cicalese, Francesco Cappello, Fabio Triolo, Giulio Taglialatela, Andrea Duchini,

Abstracts and Authors 2014

NONO regulates the cell response to UV-induced DNA damage and is a potential therapeutic target in cancer.

L. Alfano[1], C. Costa[1], A. Caporaso[2], A. Altieri[1], P. Indovina[3], A. Giordano[1,2,3] and F. Pentimalli[1]

(1) Oncology Research Center of Mercogliano (CROM); Istituto Nazionale Per Lo Studio E La Cura Dei Tumori "Fondazione Giovanni Pascale"; IRCCS; Naples, Italy
(2) Department of Medicine, Surgery and Neuroscience, University of Siena, Siena, Italy
(3) Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, College of Science and Technology, Temple University, Philadelphia PA, USA

Purpose: Genomic instability has been recently defined as one of the key hallmarks enabling cancer development and progression [1]. Indeed DNA damage and mutability endow cancer cells with genetic alterations that represent the driving force of tumour progression and account for the high molecular heterogeneity which characterizes a tumour and its ability to escape therapeutic treatments. Physical agents, such as UV and ionizing radiations, are an important environmental challenge to genome stability and a recognized cause of human cancer. However, the ability of ionizing radiations to damage DNA is also exploited to kill cancer cells and is the underlying principle of radiotherapy. In our lab we study both the biology of the cell response to DNA damaging agents and also explore possible strategies to sensitize cancer cells to DNA damaging agents [2,3]. Here we focused in particular on dissecting the role of NONO, a multifunctional protein that is overexpressed in melanoma, compared with normal melanocites, in the cell response to UV radiations, which represent the main risk factor for skin cancer.

Methods and materials: We generated NONO-silenced HeLa cell clones, through shRNA, and analyzed their ability to grow and activate the intra-S phase checkpoint that functions to prevent replication fork collapse, late origin firing and to stabilize fragile sites following UV exposure [4]. We analyzed through immunofluorescence whether NONO localizes to the sites of UV-induced RAD9 foci and, to position NONO in the complex cascade triggered by UV exposure, we analyzed the chromatin loading of various factors involved in the DNA damage response in the absence of NONO.

Results: We first found that lack of NONO decreased HeLa cell growth, likely through a delay in the G1/S cell cycle transition. Then, we challenged NONO-silenced cells with exposure to UV radiations and found that NONO-silenced cells, compared with controls, continued to synthesize DNA, failed to block new origin firing, and impaired S345 phosphorylation of the checkpoint kinase 1 (CHK1) showing a defective checkpoint activation. Consistently, we found that NONO localizes at the sites of UV-induced DNA

damage RAD9 foci. Then, we analyzed the loading onto chromatin of various intra-S-phase checkpoint mediators and found that NONO favours the loading of TOPBP1, a crucial activator of the kinase activity of ATR, the main trigger of the UV-induced DNA damage response. Strikingly, re-expression of NONO, through a sh-resistant mRNA, rescued CHK1 S345 phosphorylation in NONO-silenced cells.

Conclusion: Overall, our data uncover a new role for NONO in mediating the cellular response to UV-induced DNA damage and pave the way for future avenues of investigation addressing the potential therapeutic use of NONO targeting as a synthetic lethal approach with DNA damaging agents in tumours such as melanomas in which NONO underlies both cancer development and progression.

References:

[1] Hanahan D, Weinberg RA. Hallmarks of cancer: the next generation. Cell. Mar 4;144(5):646-74 (2011).
[2] Indovina P, Marcelli E, Di Marzo D, Casini N, Forte IM, Giorgi F, Alfano L, Pentimalli F, Giordano A. Abrogating G_2/M checkpoint through WEE1 inhibition in combination with chemotherapy as a promising therapeutic approach for mesothelioma. Cancer Biol Ther. 15(4):380-8 (2014).
[3] Di Marzo D, Forte IM, Indovina P, Di Gennaro E, Rizzo V, Giorgi F, Mattioli E, Iannuzzi CA, Budillon A, Giordano A, Pentimalli F. Pharmacological targeting of p53 through RITA is an effective antitumoral strategy for malignant pleural mesothelioma. Cell Cycle 15;13(4):652-65 (2014).
[4] Branzei D, Foiani M. The checkpoint response to replication stress. *DNA Repair (Amst)* 8: 1038-46 (2009).

On Invisibility Cloaks and Other *Metamaterial* Tricks with Waves

Andrea Alù

Department of Electrical and Computer Engineering, The University of Texas at Austin
alu@mail.utexas.edu, http://users.ece.utexas.edu/~aalu Invisibility and transparency have spurred the human imagination for centuries, but only since a few years *metamaterials*, or man-made nanostructured materials with properties that go beyond what is available in nature, have allowed to bring these concepts to fruition in practical and useful devices. Our research group at UT Austin has pioneered the conception, implementation and application of metamaterials for several exciting applications. After having envisioned the first metamaterial cloaks back in 2005, in the past few years we demonstrated the first experimental realization and measurement of passive metamaterial cloaks for free-standing 3D objects, and we introduced and experimentally realized the 'mantle cloaking' technique, based on ultrathin flexible *metasurfaces*. Our latest results have shown the realistic possibilities to make a finite-size object essentially transparent to radio-waves, by coating it with judiciously designed ultrathin structures. In this talk, we will discuss our most recent experimental results in this context, involving lithographically printed and AFM assembled metamaterial nanostructures, to realize not only cloaks, but also optical nanocircuits, nanoantennas and metasurfaces to control wave propagation and radiation, and giant nonlinearity in properly tailored metamaterials. We will also discuss our recent proposal to realize giant nonreciprocity and isolation for acoustic and electromagnetic waves without relying on magnetic bias, and the experimental realization of the fist-of-its-kind circulator for sound waves. Physical insights into these exotic phenomena and their impact on technology will be discussed during the talk.

Andrea Alù is an Associate Professor and the David & Doris Lybarger Endowed Faculty Fellow in Engineering at the University of Texas at Austin. He received his PhD from the

University of Roma Tre, Italy, in 2007 and, after a postdoc at the University of Pennsylvania, he joined the faculty of the University of Texas at Austin in 2009. His current research interests span over a broad range of areas, including metamaterials and plasmonics, electromagnetics, optics, nanophotonics and acoustics. He is the coauthor of an edited book on optical antennas, 22 book chapters, over 400 conference papers, and over 250 journal papers published in the top journals in science and engineering. Dr. Alù is a Fellow of IEEE and OSA, and has received several scientific awards, including the OSA Adolph Lomb Medal (2013), the IEEE MTT-S Outstanding Young Engineer award (2014), the IUPAP Young Scientist Prize in Optics (2014), the Franco Strazzabosco Award for Engineers from ISSNAF and the Medal of Representation from the President of the Republic of Italy (2013), the SPIE Early Career Investigator Award (2012), the URSI Issac Koga Gold Medal (2011), an NSF CAREER award (2010), the AFOSR and the DTRA Young Investigator Awards (2010, 2011). He serves on the Editorial Board of Advanced Materials and Scientific Reports, is an Associate Editor of five journals, including the IEEE Antennas and Wireless Propagation Letters and Optics Express and has been elected an APS Outstanding Referee since 2014. He has been serving as OSA Traveling Lecturer (since 2010), as IEEE AP-S Distinguished Lecturer (since 2014), and as the IEEE joint AP-S and MTT-S chapter chair for Central Texas (since 2011).

Data Science: what is and how and where it can be applied

Two significant factors have modified the landscape of the so-called "marketing research" during the last years, triggering the birth of a new discipline (you can call it "science" or "technology", depending upon your particular interpretation of these two terms), called "Data Science", "Big Data" or "Business analytics" or in many other ways.

- the possibility, provided by the evolution of Information technology hardware and software capabilities, to efficiently store and process amount of data of a size unbelievable only few years ago
- the diffusion of the "social network", allowing the collection of raw data in a very economical way, because often are the "producers", more or less spontaneously, offering data

These two conditions are just the starting point, because from "data" you must extract "information". Several techniques have been and are still introduced: we are just watching the sunrise of this discipline, that at the same time attracts corporations eager to optimize their marketing approaches, software companies offering more and more sophisticated tools and, finally, researchers that see an area where to apply techniques and methodologies often used in other fields that can be very useful in this area.

Some examples of techniques, applications scenarios (from financial to telecommunications) and open issues in "Data Science" are illustrated as connections to problems apparently very different but that, at their core, face the same challenges and require similar techniques.

The quest for a "rational" and "fair" electoral law and how mathematics could help

During the last years many discussion happened (and are still happening) in Italy about a "fair" and "rational" electoral law. It is interesting to observe that not only the same issue is being debated also in United States but that this problem has been raised already centuries ago, more or less at the same time and in the same cultural environment where the notion of modern parliamentary democracy has been shaped, and that in the post-second war mathematics became particularly interested in analyzing this problem by using the typical mathematical tools: clear and unambiguous

definitions of assumptions (or axioms, or hypothesis) and logical deduction of the conclusions.

Condorcet in 1785 published a seminal paper on this topic [1] showing a famous paradox when a two-turns election law is used and Arrow (Nobel prize for the Economy in 1972) in 1951 demonstrated in his book [2] that considering pretty general and, apparently, "obvious" conditions an electoral law verifying all these conditions just does not exist.

Several proposals have been presented to address this issue, but, in a short, the discussion is still open and not perfect solution has been identified so far.

Without entering in the mechanics of the games theory the paper will introduce the Condorcet paradox, the hypothesis used by Arrow to demonstrate his theorem and the following attempts to go beyond his conclusions.

Rodolfo Ambrosetti

With a degree in Mathematics, after having spent four years as Assistant Professor at Rome University "La Sapienza", Rodolfo joined IBM in 1977. Initially he worked as system engineer at an IBM branch office in Rome but subsequently he accepted a position in the software development area and moved to Paris (France) for an assignment in a mathematical optimization team. During that period, and subsequently in Rome, he cooperated with the IBM T. Watson Research Center and the IBM Scientific Centers in Madrid and Pisa (Italy). He was appointed software development manager in 1986 and spent six years in Cagliari (Italy) as Manager of technical operations in an IBM joint venture, where he was part of the team that established the Centro di Ricerche e Studi Superiori in Sardegna (CRS4). Back to the IBM Rome Software Development Lab, he managed large development projects before moving to Austin, Texas, where from 1996 up to 2008 he was responsible for several development organizations, including one dedicated to the pervasive computing. Before being appointed Director of the IBM Cairo technology development center he was co-responsible for the foundation of the IBM Software Lab in Krakow (Poland) that subsequently managed as its functional manager.

He is now responsible for the IBM Application Infrastructure Middleware Lab Services for Latin America.

[1] Condorcet, Marquis de: *Essai sur l'application de l'analyse a' la probabilite' de decisions rendues a la pluralite' des voix*, Paris, 1785

[2] Kenneth Arrow, *Social Choice and Individual Values*, Yale University Press, 1951. The same book has been published as *Scelte sociali ed individuali*, ETAS, 2003

Paolo Angelini, MD

Paolo Angelini, MD, has dedicated his life to the practice of medicine. It started at the University of Milan, Italy, where he received his MD–magna cum laude.

Dr. Angelini's postdoctoral training consists of:

- Rotatory Internship, Internal Medicine, at the University of Milan, Milan, Italy (1966);
- Assistant, Internal Medicine, Regional Hospital, Monza, Italy (1967);
- Rotatory Residency, Instituto Nacional Cardiologia, Mexico City, Mexico (1968-1970);
- Fellow in Clinical Cardiology, Baylor College of Medicine, Houston, Texas (1971-1973); and
- Fellow in Research Cardiology, St. Luke's Episcopal Hospital, Houston, Texas (1973).

Dr. Angelini has received numerous honors. Two honors that stand out are:

- The Order of Andres Bello, Venezuelan Republic, Caracas, Venezuela (1975); and
- The Knight Commander, Italian Republic, Rome, Italy (1984).

Dr. Angelini is also a member of the following professional societies:

Harris County Medical Society; Houston Cardiology Society; Texas Medical Society; American College of Cardiology; Houston Society of Pediatrics and the Society of Cardiac Angiography.

Due to his expertise and leadership skills, Dr. Angelini has been appointed to the following positions:

- 1969 – 1970 Instructor, Universidad Autonoma, Mexico;
- 1973 – 1976 Chief, Department of Cardiology, Regional Hospital, Potenza, Italy;
- 1975 – 1978; Instructor, Internal Medicine, Baylor College of Medicine, Houston, Texas;
- 1985 – 1995: Consultant, Veterans Administration Hospital, Houston, Texas;
- 1987 – 1993: Visiting Professor, University of Palermo, Palermo, Italy;
- 1990 – 1992: Visiting Professor, University of Belgrade, Belgrade, Yugoslavia;
- 1973 – Present: Staff Cardiologist, St. Luke's Episcopal Hospital/Texas Heart Institute, Houston, Texas; and
- 1988 – Present: Clinical Professor of Medicine, Baylor College of Medicine, Houston, Texas.

Moreover, Dr. Angelini is a pioneer of coronary angioplasty and has extensively published works (including a single-author book on "Coronary Artery Balloon Angioplasty" in 1986) on the subject since its introduction in clinical practice in 1979. Dr. Angelini also has specific interest in congenital heart disorders and has been actively involved in investigations and publications on subjects of embryology and anatomy of congenital heart defects.

Dr. Angelini's passion has led to the publication of over 140 articles in worldwide medical journals. Dr. Angelini has published the only existing book on Coronary Artery Anomalies (Lippincott, 1999) and he has been developing a specific discipline specialized in the diagnosis, clinical evaluations and treatment of coronary artery anomalies.

CASIS National Design Challenge Projects
From The Awty International School

Abstract—Awty International School was one of three Houston schools chosen to be part of a pilot program organized by CASIS (Center for the Advancement of Science in Space) which is the organization that manages the National Laboratory aboard the International Space Station. Students in the 5th and 8th grade were chosen to take part in the pilot program and each class designed and built a project that was to fly on the ISS. An overview of the projects will be presented.

GruppoTREVI

CONFERENZA DEI RICERCATORI ITALIANI IN USA

HOUSTON, 6 DICEMBRE 2014

Presentatore: Ing. Brando Ballerini, GRUPPO TREVI

Titolo: IL GRUPPO TREVI CONTRIBUISCE AL SALVATAGGIO DELLA COSTA CONCORDIA

L'esperienza del Gruppo Trevi nell'Ingegneria del sottosuolo è stata messa al servizio e si è resa decisiva per le operazioni di salvataggio della nave Concordia Costa Crociere.

La nave era naufragata a pochi metri dalle coste dell'isola toscana del Giglio ed era rimasta mezza sommersa e pesantemente inclinata su un fianco dal 13 gennaio 2012 giorno del naufragio.

Le problematiche maggiori da affrontare erano recuperare le 2,380 tonnellate di gasolio a bordo e poi disincagliare, rimuovere e trasportare in un porto per le operazioni di demolizione una nave di 290 m di lunghezza fuori-tutto, 35.5 m di larghezza, 70 m di altezza ed un peso di oltre 45,000 tonnellate. Il tutto senza pregiudicare la fauna marina di un'area protetta.

Operazione mai tentata prima e che ha impegnato una partnership di società internazionali USA e Italiane, tra cui il gruppo Trevi, le quali, utilizzando le più sofisticate tecnologie ed un progetto innovativo, hanno permesso di portare a termine il progetto in modo soddisfacente in poco più di due anni e con un costo totale di ca. 1.5 bilioni di dollari.

Il Gruppo Trevi grazie all'esperienza accumulata in altri importanti progetti di estrema complessità e rischio, tra i quali quelli di salvataggio e stabilizzazione della Torre di Pisa e della Torre di San Marco a Venezia, è intervenuto per garantire l'ancoraggio ed il contenimento per mezzo di grandi cavi d'acciaio dell'enorme struttura della nave e per evitarne il ribaltamento e la possibilità di scivolamento ulteriore.

Grazie all'elevata professionalità dei tecnici e delle maestranze impegnate nell'opera di recupero, l'operazione è stata portata a termine con pieno successo restituendo il fondale intatto all'isola del Giglio, senza danni e incidenti di sorta. Il relitto della Concordia è stato quindi trasportato dopo quattro giorni di navigazione nel porto di Genova Voltri per essere smantellato.

Mr. Brando Paolo Ballerini

Brando Paolo Ballerini began his career in the drilling industry with his family's company Ballerini S.p.a., a firm specialized in drilling rigs and equipment design and manufacturing, after he was receiving a BS degree in mechanical engineering at the Polytechnic University of Milan, Italy in 1980. He is a Registered Professional Engineer in Italy and member of the Society of Petroleum Engineers. Since 1986 he has been appointed as member of the Board of Directors and since 1989 as Chairman of Ballerini S.p.a. .Since 1993 he has been appointed as President and C.E.O. of Massarenti & Ballerini S.p.a. In 1997 he joined the Trevi / Drillmec Group and since 2004 he has been appointed as President and as Member of the Board of Directors of Drillmec, Inc., Houston, TX. From 2005 till 2010 he has been Vice President of COMITES – Houston Chapter (Committee for Italians living abroad) Since November 2010 he is the President of the Italy-America Chamber of Commerce of Texas, Inc. In 2011 he has received from Giorgio Napolitano, President of Italy, the Legion of Merit of Italy (Cavaliere della Repubblica-Stella della Solidarieta').

Possible Anticancer Activity of Two Southern Italian Tomato Cultivars on Human Gastric Cancer Cell Line: Preliminary Studies

Barone D[1], Cito L[1], Penon D[2], Penon A[3], Pentimalli F[1], Giordano A[1,3,4]

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2 Department of Biochemistry and Medical Biotechnology, UNIVERSITY of NAPLES "FEDERICO II", Naples, Italy
3 Department of Medicine, Surgery and Neuroscience; UNIVERSITY of SIENA, Siena, Italy
4 Sbarro Institute for Cancer Research and Molecular Medicine; Center for Biotechnology, College of Science and Technology, TEMPLE UNIVERSITY, Philadelphia, PA

Background: Mediterranean Diet (MD) is one of the healthiest diets whose preventive effects on cardiovascular disease and cancer are well known. Fruits and vegetables, olive oil and fish are the bases of MD and among them, a pivotal role is exerted by tomatoes. Tomato is a good source of micronutrients and phytochemicals, including lycopene, which contribute to its excellent antioxidant properties. Our study is focused on assessing, using an *in vitro* gastric model, biological and molecular effects of total lipophilic extracts of two Southern Italian tomato cultivars, San Marzano and Corbarino.
Methods: YCC3, deriving from ascites of a gastric cancer patient, was our biological model. Cells were treated with 30 µg/ml of tomato extracts, or with DMSO as control. The treatment was evaluated for its ability to affect cell growth rate, cell migration and cell cycle distribution. We also analyzed the protein level of various cell cycle regulators.
Results: Our results showed a significant reduction of cancer cell growth and migration, as a consequence of the treatment with tomato extracts. After 72 hours of incubation, tomato extracts significantly decreased the growth rate and migration ability of YCC3, compared with controls. FACS analysis showed that tomato extracts induced a block in the G0/G1 phase and a decrease in the S phase of the cell cycle. Simultaneously, increased expression levels of the pocket proteins pRb2/p130 and p107, and of the cell cycle inhibitors p27 and p21 were detected. The Corbarino showed the highest antitumoral activity.
Conclusions: Overall our data showed that tomatoes, in particular the Corbarino cultivar, significantly inhibit cell growth and cell migration through the block of cell cycle. Hence, not only lycopene extracts, but tomatoes *in toto*, may act as antitumoral

agents and their potential implementation in the diet of gastric cancer patients warrants further investigation.

ITALIAN BROADCASTING, *RADIO VATICANA* AND THE ROMAN CATHOLIC CHURCH, 1910-1945

This research critically examines the development of *Radio Vaticana*, the official broadcasting voice of the Vatican State and the Papacy, from its founding in 1931 to the end of the Second World War in 1945. The relationship of *Radio Vaticana* to the Vatican and its broadcasting content is essential for understanding this particular broadcaster's crucial role as the international voice of the Papacy's foreign and domestic policy. *L'Osservatore Romano*, the official newspaper of the Vatican, becomes a comparative tool for illuminating the serious issues the Church faced during this challenging period.

The historical context is the Roman Catholic Church's loss of its long political and educational dominance of the Italian peninsula after the establishment of the Italian state in the 1870's under Count Cavour and King Victor Emanuel. Following this loss, the Church had to develop a relationship with Italy's post-world war Mussolini-led Fascist government. Charting the Church's re-establishment of its influence and accommodation with Fascism during such a critical period of Italian history illuminates how well the Church's objectives were fulfilled in the following years. The main objective was the survival of the Church and the expansion of its influence worldwide, and it was implemented through diplomatic efforts and with the Vatican media. However, the Vatican had more to worry about than its relationship with Mussolini, for the rise of Fascism across Europe threatened the Catholic faithful from Spain to Germany.

1920-1943 was a formative period in the history of media development in Italy as well, as it witnessed the rise and fall of Fascism, the arrival of the Allied Forces, and the establishment of the new Italian state under the hegemony of the *Christian Democratic Party* (*DC*). Similarly, the years preceding and immediately following the Second World War epitomized a phase of great transition, danger, and change for the Catholic Church. After re-establishing its influence over the Italian people with the help of Fascism, the Vatican played a careful balancing act between the Allies and Axis forces to survive the world conflict and ostensibly 'protect the faithful' around Europe. This research contributes importantly to understanding how Vatican policies were implemented

through the mass media in Italy during the most crucial years in that country's development.

Biography

Dr. Livia Bornigia received her B.A. in Communication Studies from the University of St. Thomas, her M.A. in Mass Communication from the University of Houston and her Ph.D. from the School of Historical Studies at Leicester University in England. Dr. Bornigia teaches rhetorical theory, persuasion, propaganda and film at the University of Saint Thomas. She is a writer, actor and director. She has appeared in many local productions and directed and wrote "Turn," a play about the war on drugs. Dr. Bornigia is writing a play about exonerated death row inmate Anthony Graves and finishing a manuscript on the history of Vatican Radio and Italian media. She is on the board of the Italian Cultural and Community Center.

FORMATO EUROPEO PER IL CURRICULUM VITAE

(In Formato Sintetico)

INFORMAZIONI PERSONALI

Nome	**BUSULINI, GIULIO MARIA**
Indirizzo	**3000 WHITEHAVEN ST NW, 20008 WASHINGTON DC, USA**
Telefono	**0012026124436**
E-mail	**giulio.busulini@esteri.it**
Nazionalità	Italiana
Data di nascita	11 DICEMBRE 1968

ESPERIENZA LAVORATIVA

• Date (da – a)	2010 - presente
• Nome e indirizzo del datore	Ministero degli Affari Esteri – Piazzale della Farnesina 1, Roma
• Tipo di azienda o settore	Esperto scientifico
• Tipo di impiego	**Addetto scientifico Presso Ambasciata d' Italia a Washington DC - USA**
• Principali mansioni e responsabilità	Promozione della ricerca e tecnologia italiane. Cooperazione scientifica e tecnologica bilaterale e multilaterale

2003 – 2010
Università di Roma Tor Vergata
Centro di eccellenza Jean Monnet
2008-2010: Responsabile per i rapporti internazionali, in particolare riferimento agli USA

E2B LAB Facoltà di Economia
2004 – 2007: Responsabile tecnico organizzativo E2B LAB Laboratorio Incubatore d'impresa universitario Facolta' di Economia, con il sostegno del Ministero delle Attività Produttive.

Scuola IaD (istruzione a distanza)
2003 – 2004 : Project developer e responsabile delle relazioni internazionali

1988-2003
REDCO Srl, Firenze
2001-2003: Direttore Esecutivo
1994-98: Responsabile settore start-up, relazioni con i clienti e loro insediamento nel territorio.
1992-97: Responsabile per la creazione e avviamento del Global office network (GON) Europe / Us/ ASIA

ISTRUZIONE E FORMAZIONE

2008: Brookings Institution, Washington: Executive Program: "Inside Washington for International Companies"
2007-2008: IASD: Istituto Alti Studi per la Difesa, Ministero della Difesa, Roma: 7a Sessione Speciale dell'Istituto Alti Studi per la Difesa nell'Anno Accademico 2007-2008 (nominato dal

Rettore, in rappresentanza dell'Università di Roma Tor Vergata)
2008: Università di Roma Tor Vergata: Laurea in Scienza della Comunicazione
2001: Scuola Scienze Aziendali, Firenze: corsi in Gestione d'impresa; Controllo di gestione; E-marketing, E-business per la successione d'impresa, Diritto privato per l'impresa; Legislazione Tributaria; Amministrazione delle Imprese; Informatica; Management e Organizzazione aziendale; Gestione e sviluppo delle risorse Umane; Gestione Amministrativa e Contabilità dei costi; Marketing, distribuzione e tecniche di vendita; Analisi informatica per l'organizzazione.
1999: APIFINSER, Firenze: Corsi di aggiornamento su Amministrazione, controllo e finanza; Produzione e logistica; Marketing; Qualità, Organizzazione e sistemi informativi; Abilità imprenditoriale e risorse umane; Strategie aziendali
1998: Confindustria Firenze: Seminari di Formazione sulla Gestione del Cambio generazionale in azienda
1994: ELEA, Firenze: Corso project management e BPR (business process reengineering)
1990-92: European Business School, Milano

CAPACITÀ E COMPETENZE PERSONALI

Acquisite nel corso della vita e della carriera ma non necessariamente riconosciute da certificati e diplomi ufficiali.

MADRELINGUA **ITALIANO**

ALTRE LINGUA

INGLESE

• Capacità di lettura OTTIMO
• Capacità di scrittura OTTIMO
• Capacità di espressione orale OTTIMO

TEDESCO

• Capacità di lettura DISCRETO
• Capacità di scrittura DISCRETO
• Capacità di espressione orale DISCRETO

FRANCESE

• Capacità di lettura DISCRETO
• Capacità di scrittura DISCRETO
• Capacità di espressione orale DISCRETO

CAPACITÀ E COMPETENZE RELAZIONALI

Vivere e lavorare con altre persone, in ambiente multiculturale, occupando posti in cui la comunicazione è importante e in situazioni in cui è essenziale lavorare in squadra (ad es. cultura e sport), ecc.

LUNGA ESPERIENZA NAZIONALE E INTERNAZIONALE NEI SETTORI DELL'IMPRESA, DELL'INNOVAZIONE TECNOLOGICA, DELLA RICERCA SCIENTIFICA E TECNOLOGICA E DEL TRASFERIMENTO DI TECNOLOGIA UNIVERSITÀ -IMPRESA. NATURALE ATTITUDINE AL LAVORO DI GRUPPO E CAPACITÀ DI ASSUMERE RESPONSABILITÀ. SPICCATA PROPENSIONE ALLE RELAZIONI INTERPERSONALI ED AL NETWORKING. SENSO DELLO STATO E DELLE ISTITUZIONI. GRANDI CAPACITÀ DI SCOUTING.

CAPACITÀ E COMPETENZE ORGANIZZATIVE

Ad es. coordinamento e amministrazione di persone, progetti, bilanci; sul posto di lavoro, in attività di volontariato (ad es. cultura e sport), a casa, ecc.

[ASSOCIAZIONI PROFESSIONALI)
CONFINDUSTRIA (1997-2007)
2005 – 2007: Membro del Comitato Education del Gruppo Giovani Imprenditori Nazionale – Coordinatore del Gruppo di Lavoro Best Practices / Università –Impresa; partecipazione al progetto Partnership for Growth promosso dall'Ambasciata USA a Roma.
2003 –2005 Delegato del Gruppo Giovani Imprenditori di Firenze alle relazioni internazionali – promotore di Workshop europeo Presso Piaggio Spa in collaborazione con YES – European Association of Young Entrepreneurs – Bruxelles;
1997 - 2005: membro del Comitato Nazionale per le relazioni internazionali ed europee. Delegato presso YES (European Association of Young Entrepreneurs, Bruxelles). Rappresentante italiano in numerose attività dei giovani imprenditori europei.
1999-2002: Eletto consigliere del "Consiglio Terziario innovativo" di Firenze

1997: membro del "Comitato New Economy" di Firenze
API (ASSOCIAZIONE PICCOLA INDUSTRIA)(1999-2004)
2000-2003: Membro del Consiglio di amministrazione Apifinser (Agenzia di servizi e di formazione dell'Api Toscana). Organizzazione e partecipazione missione API negli USA
1999 – 2004: Membro del Gruppo Giovani Toscano

Capacità e competenze tecniche
Con computer, attrezzature specifiche, macchinari, ecc.

Piattaforme per il business: Workgroup, contact Manager, Workflow Management, CRM (Custom Relation Mng), CTI (Computer Telephony integration)
Piattaforme per apprendimento: LMS, collaborative learning
Sistemi operativi e architetture: past and windows XP – W server family etc., basic of linux
Programs and software: Office package, Exchange 2000, IVR, Voice over IP, etc.

THE PATHOLOGY OF THE MOLECULAR CHAPERONES

Francesco Cappello1,2,*, Everly Conway de Macario3, Giovanni Zummo1, Alberto JL Macario1,3

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Molecular chaperones (chaperones in short) are important components of all living cells in which they play a variety of roles, not just maintenance of protein homeostasis. A malfunctioning chaperone or the lack of its function may cause disease, a chaperonopathy. Chaperonopathies can be due to a structural defect in the chaperone molecule, or to a mechanism in which the affected chaperone is structurally normal (at least by current methodology) but does not work, or works abnormally, or works for a cell that causes disease (for instance a cancer cell). In all these situations, the affected chaperone can be considered an, or *the*, etiological-pathogenic factor necessary to cause a pathologic condition.

In the last 15 years we have been focusing on a number of diseases that can be considered chaperonopathies. In a recent publication (1), we summarized our studies and presented pathological conditions in which the association of disease with abnormal chaperones is firmly established, e.g. inborn nervous system diseases (such as some leukodystrophies) and ciliogenesis errors. In addition, we introduced various conditions that are candidates for acceptance into the group of authentic chaperonopathies and that are still under scrutiny, e.g. neurodegenerative disorders, chronic inflammatory conditions occurring in the lung or intestine, and some types of cancer, such as those affecting the colon, prostate, and airways. We would like to emphasize the need of research to elucidate the pathogenic mechanisms that lead to the lesions observed in tissues and organs in chaperonopathies. These studies should focus on the structural and functional abnormalities of the affected chaperone molecule itself and, also, on the mechanism by which the pathological chaperone molecule affects cellular processes, tissue anatomy and histology, and organ physiology. Quantitative and qualitative changes in chaperones may be used as biomarkers for disease diagnosis and follow-up as well as for monitoring response to treatment. Finally, chaperones can, in principle, be used in therapy, for instance, to replace a deficient chaperone (positive

chaperonotherapy). On the contrary, in some chaperonopathies it may be necessary to block or eliminate a chaperone which is promoting disease, and so anti-chaperone agents are indicated (negative chaperonotherapy). These fields are very promising for research and we are involved in some of them pertaining to Hsp60 in colon cancer, inflammatory bowel diseases, Hashimoto's thyroiditis, chronic obstructive pulmonary disease, myasthenia gravis, and epilepsy, and we are open for interaction with colleagues for the sake of rapid advances that may lead to production of therapeutic agents. We have recently launched a Website (http://www.chaperones-pathology.org) dedicated to the chaperonopathies as a service to the biomedical community and to enhance dissemination of knowledge about these conditions. We also aim at compiling a comprehensive database of chaperonopathies from which researchers and practitioners alike should profit. In this regard, we ask our colleagues cooperation by submitting pertinent information if they happen to find cases that might qualify as chaperonopathies to be catalogued in the database.

1. Macario AJL, Conway de Macario E, Cappello F: The Chaperonopathies. Diseases with Defective Molecular Chaperones. http://dx.doi.org/10.1007/978-94-007-4667-1. (eBook); DOI 10.1007/978-94-007-4667-1. Springer Dordrecht Heidelberg New York London. 2013. http://www.springer.com/biomed/book/978-94-007-4666-4

*Francesco Cappello, MD, is an Associate Professor of Human Anatomy at the University of Palermo, Palermo, Italy and Scientific Director of the Euro-Mediterranean Institute of Science and Technology, Palermo, Italy. He is also Research Associate of the Institute of Biophysics, National Research Council, in Italy, Scientific Committee Member of the Institute "Paolo Sotgiu", in Lugano, Switzerland, and Associate Member of the Graduate School of Biomedical Sciences at University of Texas Medical Branch, Galveston (TX), USA.

For more information, please visit: www.unipa.it/francesco.cappello

Davide Cattano, M.D., Ph.D., was born in Rome, Italy (1974). He graduated from Universita Campus Bio Medico of Rome, Italy, Magna Cum Laude (1999). He graduated at the Anesthesiology Intensive Care-Critical Care Residency Program Medical School University of Pisa, Italy, Magna Cum Laude (2003). Dr. Davide Cattano obtained his Ph.D. in Morphology and Physiology and Pathophysiology of Cells and Tissues in the Department of Human Morphology and Applied Biology, University of Pisa, Italy (2007). Dr. Cattano is Associate Professor of Anesthesiology and Director of Clinical Research in the Department of Anesthesiology at The University of Texas Medical School at Houston, Medical Director of the Preoperative Anesthesia Clinic Memorial Hermnn Hospital and service Chief for ENT/OMF, plastic and eye surgery.

Differential Effects of Sevoflurane versus Propofol on the Morphoproteomic Expression of Oral Cavity and Oropharyngeal Squamous Cell Carcinoma

Davide Cattano, MD, PhD; Jay K Ferrell, MD; Robert E Brown, MD; Chirag Patel, MD, PhD; Ron J Karni, MD.

The University of Texas Medical School at Houston, Memorial Hermann Hospital TMC Houston. Abstract presented at the 2014 Texas Society of Anesthesiologists meeting and awarded first place as best translational-basic research abstract.

Perioperative factors including anesthestics may affect cancer biology and local or distant recurrence following ablative surgery. [1] Early evidences suggest that volatile anesthetics may up-regulate key intracellular survival pathways thereby compromising

subsequent treatments, but none have focused specifically on head and neck squamous cell carcinoma (SCCA).[2] In this in vivo human pilot study, we tested the hypothesis that sevoflurane and propofol (prototypical inhalational and intravenous anesthetics) exert differing effects on the molecular biology of oral cavity and oropharyngeal SCCA using morphoproteomic analysis. After institutional review board approval, ten patients with previously untreated oral cavity and/or oropharyngeal SCCA diagnosed between September 2013 and January 2014 were consented and enrolled. The pre- and post-anesthesia tumor tissue then underwent blinded morphoproteomic analysis which determined the relative expression of specific pro-survival protein markers as well as their cellular compartmentalization (i.e. nuclear versus cytoplasmic). The following ten immunohistochemical protein markers were used: HIF-1α, HIF-2α, Sirt1, p-mTOR, FASN, COX-2, p-c-Met, p-AKT, p-NF-kB, and p-p38MAPK. Some grade of differential expression of several protein markers was observed between pre- and post-anesthesia tissue samples and between the two groups, but exposure to sevoflurane demonstrated a statistically significant increase in the exposure-anesthesia expression of cytoplasmic HIF-2α($p=0.05$) and nuclear p-p38MAPK ($p=0.04$), compared to propofol. While only preliminary, our results suggest that inhalational and total intravenous anesthesia differentially affect the proteomic expression profile of head and neck SCCA.

[1] Tavare AN, Perry NJ, Benzonana LL, Takata M, Ma D. Cancer recurrence after surgery: direct and indirect effects of anesthetic agents. Int J Cancer. 2012 Mar 15;130(6):1237-50

[2] Brown RE. Morphogenomics and morphoproteomics: a role for anatomic pathology in personalized medicine. Arch Pathol Lab Med. 2009 Apr;133(4):568-79.

p53 reactivating agents as new therapeutic approach to glioblastoma multiforme

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2 Sbarro Institute for Cancer Research and Molecular Medicine; Center for Biotechnology, College of Science and Technology, TEMPLE UNIVERSITY, Philadelphia, PA

Background: Brain tumors represent the second most common cause of death in the United States and contribute to 2.4% of deaths. Glioblastoma (GB) is the most aggressive glial tumor and accounts for 54% of all gliomas. GB escapes current treatment, consisting of surgery, radiotherapy, and chemotherapy. A complete surgical resection of GB is almost impossible, moreover, it is highly refractory to RT and CHT, mainly due to its heterogeneity, and complexity of genetic and molecular alterations, still scarcely known.
TP53 mutations occur in the majority of low-grade gliomas and secondary GBs, but at a lower frequency in primary GBs. Activation of the TP53 pathway occurs early in tumor development and plays a crucial role in the evolution of lower-grade gliomas into GBs.
The main goal of this research project was the study of the effect of two different reactivating p53 molecules, RITA and Nutlin-3, in glioblastoma cell lines. The studies were conducted on cellular models of GB consisting of stabilized primary lines.

Methods: First of all we assessed the expression and p53 mutation status in a panel of GB cell lines (T98G, U87MG, HU2, U373, D384) by western blotting, real time PCR and successive sequencing. Successively it has been evaluated the short term cytotoxic effect of RITA and Nutlin-3 on cell proliferation by MTS assay with the consequent definition of IC50 for each cell line; the long-term cytotoxic effect has been assessed by clonogenic assay. Preliminary study allowed to identify the presence of p73, instead of p53, in the D384 glioblastoma cell line. The evaluation of the expression of this member of the p53 family raised from the observation of the sensitivity of the D384 cell line to treatment with Nutlin-3 rather than with RITA.

The effects of RITA and Nutlin-3 on cell cycle distribution were determined by flow-cytometry. These experiments highlighted the ability of RITA to induce an increase of the S phase fraction and of the sub G1 fraction in all GB cell lines examined, with the exception of the D384. This cell line, lacking p53, was sensitive only to Nutlin-3 which induces an increase in the G0/G1 fraction resulting cell cycle block. The increase of the subG1 fraction and the consequent apoptosis was confirmed with the Annexin V assay. The ability to induce apoptosis in GB cells, reactivating p53 and down-regulating p21, was confirmed by western blotting which highlighted the degradation of survivin and of full length caspase-3 and the increase of cleaved form of the protein.

In order to assess if the cellular response was mediated by functional p53 and if the transcriptional activity or mitochondrial pathway were essential to determine the response to RITA, cell lines cotreatment with RITA (IC50) and chemical inhibitors of p53 (pifithrin-α and – μ) was performed. First of all, MTS assay showed that pifithrin α is able to counteract the effect of RITA on cell viability, while pifithrin- μ is toxic for all cellular systems used. Analog results were obtained with Annexin V assay that showed that pifithrin-α abolished RITA -induced apoptosis.

Conclusions: Our data indicate that RITA is able to act both on wild type and p53-mutated GB cells, and therefore has an advantage over nutlin-3 which acts with a different mechanism of action. Recent studies reported in the literature show that the use of nutlin-3 may act as anti-tumor inducing apoptosis or senescence in GB cells and counteract the resistance to Temozolomide. The use of these molecules may therefore be an alternative or synergistic therapeutic approach, with respect to Temozolomide that, although represents the gold standard for the treatment of GB, in most cases gives rise to the onset of resistance phenomena.

Human Wharton's jelly-derived mesenchymal stem cells in type I diabetes

T Corsello PhD, M Montalbano PhD, L Cicalese MD, G LaRocca PhD, C Rastellini MD.

University of Texas Medical Branch, Galveston (TX – USA) and Department of Biomedicine and Neuroscience, Palermo (Italy)

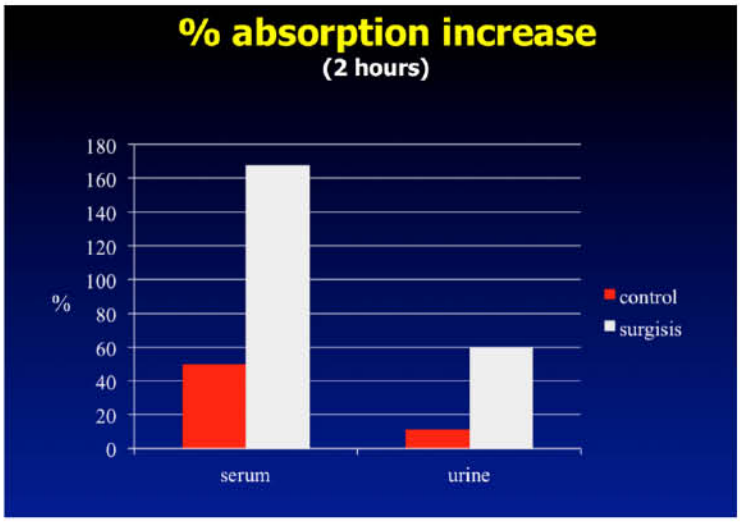
Type I diabetes (TID) is an immune disease characterized by T-lymphocytes-mediated pancreatic beta cells destruction. TID is usually diagnosed in children and young adults and presents itself with a rapid and aggressive onset. Currently the causes leading to the immune system activation targeting the beta cells are not fully understood. Different hypothesis, including genetic and viral, have been postulated and are under investigation. Patients affected by TID require daily insulin injections and are at risk for short- and long-term complications associated to the disease, including blindness, renal and heart failure. While insulin is instrumental for diabetic patient survival, pancreas and pancreatic islet transplantation are two potential treatments currently available for the disease. Pancreatic islet transplantation consists in transplanting only the insulin-producing cells and this is accomplished through a minimally invasive procedure. Although this approach is known to be feasible and to treat diabetes, more research is needed to improve the outcome so that it can be offered to a larger population of diabetic patients. It has been previously shown that Wharton's jelly-derived mesenchymal stem cells (WJ-MSC), obtained from human umbilical cords, can have immuno-modulatory, anti-inflammatory, pro-vascularization, and pro-differentiation effects, representing potentially a very valuable tool in regenerative medicine. In our study, we are investigating the effect of WJ-MSC as adjuvant to pancreatic islets transplanted in a diabetic animal model. Following isolation and characterization of human WJ-MSC we have 1) investigated *in vitro* viability, immuno-modulatory and anti-inflammatory effect of WJ-MSC when co-transplanted with pancreatic islets and 2) determined potential beneficial effect of WJ-MSC when co-cultured and/or co-transplanted with pancreatic islets. The overall objective of this project is to determine the effect of WJ-MSCs on pancreatic islet engraftment and functionality *in vitro* and in vivo.

Creation of a functional bio-artificial Intestine in rats

T Corsello PhD, G Damiano MD, M Tuveri MD, M Montalbano PhD, C Rastellini MD, L Cicalese MD

University of Texas Medical Branch, Galveston (TX – USA)

Short bowel syndrome (SBS) is a condition caused by reduced intestinal length due to developmental defects, loss of intestine after surgery for infectious, inflammatory and neoplastic diseases (Crohn's disease, mesenteric thrombosis, and necrotizing enterocolitis). Patients affected by SBS show altered degree of nutrients malabsorption according to the damaged area. Total parental nutrition (TPN) may improve the life extension, but it is linked to severe complications as metabolic abnormalities, line sepsis, hepatic insufficiency. Intestinal transplantation, is still limited by high immunogenicity response and shortage of donors.
A new surgical approach consists in creating a bio-engineered segment of intestine. Using a decellularized biologic scaffold, we have successfully developed in our lab a bio-artificial intestine that morphologically is similar to naïve intestine. This neo-formed intestine is constructed with the intervention of naïve stem cells in vivo that initially repopulate the scaffold and over a period of time are transformed in different cell populations typical of normal intestinal mucosa. In this study we plan to demonstrate that the so obtained bio-artificial intestine possesses also functional absorptive characteristics necessary to utilize this structure in a possible therapeutic application. In fact, functional segment of neo-formed intestine could be transplanted in patients with SBS with no immunosuppression allowing an improved absorption of nutrients hence curing the patient.



We transplanted 2cm sections of acellular matrix (Surgisis, Cook Medical, US) in the anti-mesenteric side of the jejunum and ileum of 11 rats. After 4, 8 and 12 weeks, animals were tested and neo-formed intestinal tissue with normal mucosa was seen starting at 8 weeks as expected from our previously developed model. We investigated the absorption capacity isolating a segment of 2cm of intestine containing the neoformed mucosa and comparing it to equal segment in un-operated normal control animals. D-Xylose solution was introduced in the lumen of the intestinal segments and 2 hours later the urine and blood were collected to evaluate

D-Xylose levels. Quantitative analysis was performed using Elisa. We observed an increased absorption ($p<0.05$) of D-xylose in the intestinal segment containing neo-formed mucosa as shown in the graph. With this study, we confirmed for the first time that bio-artificial intestine obtained with the use of a decellularized biologic scaffold has functional characteristics of absorption confirming its potential for therapeutic interventions.

Biosketch

Dr. Tiziana Corsello was born in Sicily, Italy. She graduated in Chemistry and Pharmaceutical Technology at the University of Palermo in 2012, presenting the experimental thesis, entitled: "Characterization of new markers derived from mesenchymal stem cells (Human umbilical cord)". She was accepted in the Molecular and Experimental Medicine PhD course at the University of Palermo that she is currently attending. In addition, she has been admitted into the Neuroscience Graduate Program at the University of Texas Medical Branch, Galveston (TX), USA, as a graduate student in Neuroscience and Cell Biology. She is currently working in the transplant research laboratory at the University of Texas Medical Branch mentored by Dr. Cristiana Rastellini, Director of the transplant research laboratory and Dr. Giampiero La Rocca, scientist at the University of Palermo, Department BIONEC.

Samantha Cristoforetti

Born in Milan, Italy, on 26 April 1977, Samantha Cristoforetti enjoys hiking, scuba diving, yoga, reading and travelling. Other interests include technology, nutrition and the Chinese language.

Education

Samantha completed her secondary education at the Liceo Scientifico in Trento, Italy, in 1996 after having spent a year as an exchange student in the United States.

In 2001, she graduated from the Technische Universität Munich, Germany, with a master's degree in mechanical engineering with specialisations in aerospace propulsion and lightweight structures. As part of her studies, she spent four months at the Ecole Nationale Supérieure de l'Aéronautique et de l'Espace in Toulouse, France, working on an experimental project in aerodynamics. She wrote her master's thesis in solid rocket propellants during a 10-month research stay at the Mendeleev University of Chemical Technologies in Moscow, Russia.

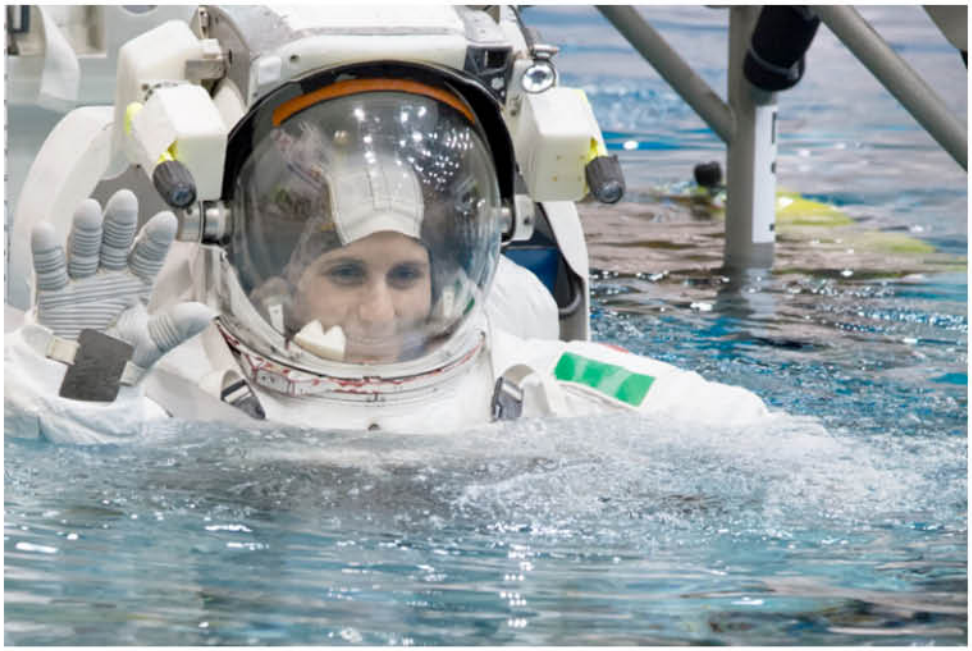
As part of her training at the Italian Air Force Academy, she also completed a bachelor's degree in aeronautical sciences at the University of Naples Federico II, Italy, in 2005.

Experience

In 2001 Samantha joined the Italian Air Force Academy in Pozzuoli, Italy, graduating in 2005. She served as class leader and was awarded the Honour Sword for best academic achievement. From 2005 to 2006, she was based at Sheppard Air Force Base in Texas, USA. After completing the Euro-NATO Joint Jet Pilot Training, she became a fighter pilot and was assigned to the 132nd Squadron, 51st Bomber Wing, based in Istrana, Italy.

In 2007, Samantha completed Introduction to Fighter Fundamentals training. From 2007 to 2008, she flew the MB-339 and served in the Plan and Operations Section for the 51st Bomber Wing in Istrana, Italy.

In 2008, she joined the 101st Squadron, 32nd Bomber Wing, based at Foggia, Italy, where she completed operational conversion training for the AM-X ground attack fighter.
Samantha is a Captain in the Italian Air Force. She has logged over 500 hours flying six types of military aircraft: SF-260, T-37, T-38, MB-339A, MB-339CD and AM-X.
Samantha was selected as an ESA astronaut in May 2009. She joined ESA in September 2009 and completed basic astronaut training in November 2010. In July 2012 she was assigned to an Italian Space Agency ASI mission aboard the International Space Station, to be launched on a Soyuz spacecraft from Baikonur Cosmodrome in Kazakhstan in 2014. This will be the second long-duration ASI mission and the eighth long-duration mission for an ESA astronaut.
Samantha is now training for her mission on Station systems, the Russian Soyuz spacecraft, robotics and spacewalks.
When not in training in the US, Russia, Canada or Japan, Samantha is based at the European Astronaut Centre in Cologne, Germany. She enjoys interacting with space enthusiasts on Twitter as @AstroSamantha.
The Robotic Turn: Expanding Materials and Fabrication Processes Through the Integration of Industrial Autonomous Systems



Pasquale De Paola, Ph.D.

This paper investigates the use of industrial robots in architectural design and fabrication. Robots are programmable, mechanical, and automated instruments that assist in processes of architectural fabrication and assembly. Considering the latest technological trends, architects, artist and designers at the forefront of fabrication technology are beginning to broadly integrate robotics because of the lower cost of entry in recent years and their versatile, expandable nature. A robotic arm can be equipped with a wide range of end-effectors, similar to a human hand using various tools. Additionally, due to their prevalence in industry, those robots are not just prototypical machines but certifiable, reliable, and increasingly affordable, today costing 70% less than the average price in the 1990s. The proliferation of digital tools and the use of industrial robotics appear to embody the potential for new design practices that intensify design, mass-customization, and fabrication processes. But most importantly, industrial robots can bridge the gap existing between formal innovations and material-based processes typical of architectural practices, eventually facilitating the integration between formal flexibility and digital materiality.

Personal Biography

Pasquale De Paola is an Assistant Professor and Program Chair in the School of Architecture at Louisiana Tech University where he has been a full-time faculty member since 2010. He currently holds the *Howard Endowed Professorship in Architecture* for service and innovation in architectural pedagogy.

Pasquale attended the School of Architecture at the Università degli Studi di Napoli Federico II in Italy from 1993 till 1998, and received his Bachelor of Architecture degree from Louisiana State University in 2005. He entered the Architecture and Urban Design program at Columbia University Graduate School of Architecture, Planning, and Preservation in the summer of 2005, and obtained his Master of Science degree in Architecture and Urban Design in May of 2006. Pasquale received his Ph.D. from Texas A&M in 2011 completing his dissertation *A Question of Method: Architettura Razionale and the XV Milan Triennale of 1973*, which examined the methodological framework established by the Italian Neo-Rationalists with emphasis on the Milan Triennale exhibition of 1973. The dissertation was awarded the ARCC King Medal for Advanced Architectural Research in 2011.

Professionally, Pasquale has practiced architecture for Carlo Aymonino, Bernard Tschumi, and Rogers Fowle Epstein (Richard Rogers Partnership), focusing on the formal integration of structural envelopes and programmatic systems. Academically, he has also taught at Columbia, NYIT and Texas A&M University. His research interests include Italian architectural culture, history and theory of contemporary architecture, philosophical contaminations, computational design strategies, and biogenetic analogues, which he also explores in his private practice. Pasquale is currently working on his book proposal *Architecture in the Age of Contingency*, which is currently being

reviewed by Routledge; he is also considering publishing an anthology of essays on speculative materialism and its influence on contemporary architectural production with Open Humanities Press.

EvK2CNR Association

EvK2CNR is an autonomous, non-profit association, which promotes scientific and technological research in mountain areas. Particular emphasis is placed on the Hindu Kush – Karakorum – Himalaya region and on work in the countries of Nepal and Pakistan. EvK2CNR is best represented by its Pyramid Laboratory/Observatory located at 5,050 meters a.s.l. in Nepal at the base of Mount Everest. EvK2CNR research has traditionally focused on the fields of Earth Sciences, Environmental Sciences, Medicine and Physiology, Anthropology, and development of new technologies.
In Pakistan during last ten years EvK2CNR worked on the improvement of the Central Karakorum National Park, in 2014 thanks to the strong support of the Italian research the official version of Management Plan of the Park becomes effective.
Today, EvK2CNR's work is mainly organized via broad-scale integrated multi-disciplinary programs aimed at helping resolve urgent environmental and development issues.
EvK2CNR works through a network of national and international scientific collaborations, in particular with the Italian National Research Council (CNR).
EvK2CNR research programs are developed in line with the priorities and indications of governmental and intergovernmental agencies, including those of the UN. Several projects are carried out in cooperation with organisms like UNEP and WMO, as well as with international scientific institutions and NGOs.

The Pyramid International Laboratory/Observatory

The Pyramid International Laboratory/Observatory high altitude scientific research center is located at 5,050 m (16,568 ft.) a.s.l., in the Khumbu Valley, Sagarmatha National Park, at the base of the Nepali side of Everest.

For decades, researchers like the famous Italian explorer and geologist, Prof. Ardito Desio, struggled to carry out scientific endeavors in remote high altitude areas,

dependent on precarious tents and unreliable generators. By the end of the late eighties, Prof. Desio, together with climber and businessman, Agostino da Polenza, with whom he had founded the EvK2CNR Project, had decided a permanent high altitude laboratory in the Himalayas was the answer.

In 1990, EvK2CNR and the then Royal Nepal Academy of Science and Technology (RONAST), signed an agreement for the installation of the Pyramid on the Nepali side of Everest in the Sagarmatha National Park.

The laboratory was installed and became operational in September 1990. Not only did the Pyramid soon become a fundamental scientific outpost for researchers and technicians, but it also grew to be known as a point of reference for local populations and tourists who could take advantage of the advanced telecommunications systems available there to send urgent messages to Kathmandu or abroad.

The Pyramid International Laboratory/Observatory was officially inaugurated in October or 1990, by the Prime Minister of Nepal, a RONAST officer, the Italian Ambassador in Kathmandu, Agostino Da Polenza and the incredible Ardito Desio, who, at the age of 93, would not miss the historic occasion, making the trip personally to the Pyramid's 5,050 meters a.s.l.

Since then, this flagship of international high altitude scientific research has become the symbol of EvK2CNR and a point of pride for the Nepali and Italian governments.

Since 1990,Pyramid it has been offering the international scientific community a priceless opportunity to study the environment, climate, human physiology and geology in a remote mountain protected area. The Pyramid is jointly managed by the Ev-K2-CNR Committee and the Nepal Academy of Science and Technology (NAST). To date, 580 scientific missions have been carried out there by 220 researchers from more then 170 different scientific institutions in several nations.

The three-story glass, aluminum and steel structure, with its stable square-based pyramid shape [13.22 m (43.37 ft.) x 8.40 m (27.56 ft.) high], is equipped with advanced technological instrumentation and facilities, including telecommunications and internet. It is totally self sufficient, using only renewable energy provided by a large solar power system. Waste is managed in collaboration with the Sagarmatha Pollution Control Committee according to local regulations.

CURRICULA

Elisa Vuillermoz - Bergamo

Elisa Vuillermoz, PhD in Earth Sciences is working at Ev-K2-CNR since 2004, year in which she participated as researcher on the field, to the mountaineering-scientific expedition *'K2-2004, 50 years later'* to carry out environmental projects for the implementation of meteo-climatic measurements in the Baltoro region and for the study of snow chemical composition at Mt. K2.

At present she is coordinating scientific research and monitoring projects of Ev-K2-CNR, which main activity is SHARE (Stations at High Altitude for Research on the Environment) devoted to the study of climate change and related impacts at high altitude through ground-based monitoring networks and field campaigns in Himalaya-Karakorum, Rwenzori, Andes, Italian Alps and Appennines.

Laxman – Pyramid

Laxman Adhikari obtained a 3 years Diploma in Electrical engineering. He joined Ev-K2-CNR in 2006 as technical staff member for Pyramid International Laboratory - Observatory in Nepal. During the first 2 years he served as junior technical staff and in 2008, and after a training period in Italy, he became manager of Pyramid Laboratory. He has also participated to the Atmospheric Brown Cloud (ABC) training programme in Kathmandu. He is taking care of all the Automatic Weather Stations (AWS) installed in Khumbu valley and at Pyramid and all other related stations. In 2013, he became Technical and Scientific Supervisor and, since then, he is supervising Ev-K2-CNR scientific research and monitoring activities in Khumbu from a technical point of view.

The History of Ev-K2-CNR

It all began when a 1986 American expedition declared K2 was taller than Everest. **Agostino Da Polenza** and **Prof. Ardito Desio** could not resist this challenge and, in 1987, they united their scientific and mountaineering strengths to launch the **"Ev-K2-CNR Project" in collaboration with the Italian National Research Council**.

They organized expeditions which put mountaineering at the service of science and re-measured both mountains using traditional survey techniques and innovative GPS (Global Positioning System) measurements. Not only did they confirm Everest's title but they also set the standard for altitude measurements to come. Two years later, they founded the **Ev-K2-CNR Committee** to continue promoting technological and scientific research at high altitude, particularly in the Hindu Kush-Karakorum-Himalaya (HKKH) region.

The next year, in 1990, by Desio himself (at the age of 93), inaugurated Ev-K2-CNR's innovative **Pyramid International Laboratory/Observatory** at 5,050 m a.s.l. in Nepal. Since then, Ev-K2-CNR has become increasingly recognized for this unique scientific research base, the quality and importance of the research carried out there and the specialized scientific contributions, combining technical and logistic know-how with scientific excellence.

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Ev-K2-CNR COMMITTEE MILESTONES:

- **1987**: Launch of **the Ev-K2-CNR Project** – re-measurement of Everest and K2 using GPS technology.

- **1989**: **Ev-K2-CNR Committee founded**.

- **1990**: Shipment and installation of **the Pyramid Laboratory/Observatory in Nepal**.

- **1991**: Installation of the Pyramid seismic station (later removed for technical reasons).

- **1992**: **Scientific expedition "Everest 92"** – re-measurement of the summit with GPS and laser technologies.

- **1994**: Scientific expedition "Extreme Altitude Survival Test (EAST) '94" – physiological investigations up to 6,500 m on Everest.

- **1995**: Construction begun on Pyramid annexed housing unit.

- **1996**: **"K2 Geoexpedition"** – re-measurement of the summit with GPS and laser technologies.

- **1997**: Scientific expedition **"Extreme Altitude Survival Test (EAST) Lhotse"**– physiological investigations up to 7,600 m.

- **1998**: Guinness Book of World Records for the highest concert at the Pyramid.

- **2000:** Founding of the 2002-International Year of Mountains Italian Committee by Ev-K2-CNR Ev-K2-CNR hosts the Alpine Forum, the scientific conference of the Alpine Convention, in Bergamo Milan Mountains 2000 event, organized by Ev-K2-CNR.

- **2001**: Re-measurement of Cerro Aconcagua.
Launch of **RATEAP project** for the study of particulate air pollution at the Pyramid Completion of the network of meteorological stations "Pyramid Meteo Network" in the Khumbu Valley.
Installation of a permanent GPS station at the Pyramid.
Participation in the World Summit on Sustainable Development (WSSD), Johannesburg.

- **2003**: Launch of the Stations at High Altitude for Research on the Environment **(SHARE) -Asia Project**.
Launch of the **DSS-HKKH Partnership Projec**t, an outcome of WSSD.
Launch of the **Snow Leopard Project** in Nepal.

- **2005**: Launch of the **Karakorum Trust project**.
Launch of "Up Project".
Karakorum Trust intervention for emergency earthquake aid in Pakistan.

- **2006**: SHARE-Asia becomes SHARE with installation of weather station on Mt. Ruwenzori, Uganda.
EARTH unit patented.
Ev-K2-CNR invited to join UNEP's Project ABC; installation of **ABC station at Pyramid**.

- **2007**: **Ev-K2-CNR Side Event at the 15th meeting of the UN Committee on Sustainable Development, New York**.

Launch of the **GEMM Project**.

Ev-K2-CNR accredited with Observer Status to the UNEP Governing Council / Global Ministerial Environment Forum (GC/GMEF).

-2008: Scientific expedition **"SHARE-Everest" – installation of the world's highest weather station.**

Ev-K2-CNR accreditation as NGO with Consultative Status by ECOSOC.

From Website http://evk2cnr.org/cms/en/evk2cnr_committee/story

ANNA L. FISHER, MD

NASA ASTRONAUT

PERSONAL DATA: Born August 24, 1949, in New York City, New York, but considers San Pedro, California, to be her hometown. Fisher enjoys snow and water skiing, jogging, flying, scuba diving, reading, photography and spending time with her daughters. Her mother, Riley F. Tingle, formerly of San Pedro, now resides in Houston. Her father is deceased.

EDUCATION: Graduated from San Pedro High School, San Pedro, California, 1967; received a Bachelor of Science in Chemistry and a Doctor of Medicine from the University of California, Los Angeles (UCLA), 1971 and 1976, respectively; received a Master of Science in Chemistry from UCLA, 1987.

SPECIAL HONORS: Awarded a National Science Foundation Undergraduate Research Fellowship, 1970, 1971; Graduated from UCLA cum laude and with honors in chemistry; NASA Space Flight Medal; Lloyd's of London Silver Medal for Meritorious Salvage Operations; Mother of the Year Award, 1984; UCLA Professional Achievement Award; UCLA Medical Professional Achievement Award; NASA Exceptional Service Medal, 1999.

EXPERIENCE: After graduating from UCLA in 1971, Fisher spent a year in graduate school, working in the field of x-ray crystallographic studies of metallocarbonanes. She co-authored three publications relating to these studies for the Journal of Inorganic Chemistry. She began medical school at UCLA in 1972 and, following graduation in 1976, commenced a one year internship at Harbor General Hospital in Torrance, California. After completing that internship, she specialized in emergency medicine and worked in several hospitals in the Los Angeles area.

NASA EXPERIENCE: Fisher was selected as an astronaut by NASA in January 1978. In August 1979, she completed a one year training and evaluation period, making her eligible for assignment as a mission specialist on space shuttle flight crews. Following her completion of training, Fisher's early NASA assignments (pre-STS-1 through STS-4) included the following: crew representative to support development and testing of the Remote Manipulator System (RMS); crew representative to support development and testing of payload bay door contingency spacewalk procedures, the extra-small Extravehicular Mobility Unit (EMU) and contingency in-orbit Thermal Protection System (TPS) repair hardware and procedures; verification of flight software at the Shuttle Avionics Integration Laboratory (SAIL), where she reviewed test requirements and procedures for ascent, in-orbit and Risk Management System (RMS) software verification; and crew evaluator for verification and development testing for STS-2, 3 and 4.

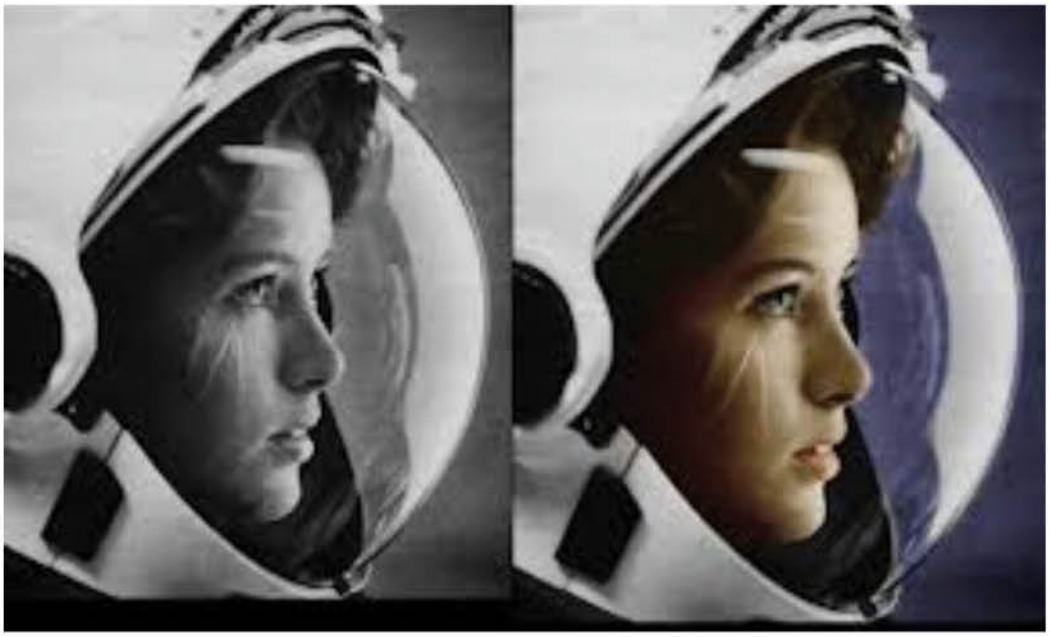
From STS-5 through STS-7, Fisher was assigned as a crew representative to support vehicle integrated testing and payload testing at NASA's Kennedy Space Center, Florida. In addition, Fisher supported each Orbital Flight Test (STS-1 through STS-4) launch and landing (at prime or backup sites) as a physician in the rescue helicopter and provided both medical and operational inputs on the development of rescue procedures. Fisher was also an in-orbit Capsule Communicator (CAPCOM) for the STS-9 mission.

Fisher was a mission specialist on STS-51A, which launched from Kennedy Space Center, on November 8, 1984. She was accompanied by mission commander Frederick (Rick) Hauck pilot David M. Walker, and fellow mission specialists, Joseph P. Allen and Dale H. Gardner. This was the second flight of the orbiter Discovery. During the mission, the crew deployed two satellites: Canada's Anik D-2 (Telesat H) and Hughes' LEASAT-1 (Syncom IV-1) and operated the Radiation Monitoring Equipment (RME) device and the 3M Company's Diffusive Mixing of Organic Solutions (DMOS) experiment. As the first space salvage mission, the crew also retrieved the Palapa B-2 and Westar VI satellites for return to Earth. STS-51A completed 127 Earth orbits before landing at Kennedy Space Center on November 16, 1984. With the completion of her first flight, Fisher logged a total of 192 hours in space.

Fisher was assigned as a mission specialist on STS-61H, prior to the Challenger accident. Following the accident, she worked as the deputy of the Mission Development branch of the Astronaut Office and as the astronaut office representative for Flight Data File issues. In that capacity, she served as the crew representative on the Crew Procedures Change Board. Fisher served on the Astronaut Selection Board for the 1987 class of astronauts. Fisher also served in the Space Station Support office, where she worked part time in the Space Station Operations branch. She was the crew representative supporting space station development in the areas of training, operations concepts and the health maintenance facility.

From 1989 through 1995, Fisher was on a leave of absence from the Astronaut Office to raise her family, returning in January 1996. From 1996 through 2002, during the early phase of building the International Space Station (ISS), Fisher was the chief of the Space

Station branch. In that capacity, she coordinated inputs to the operations of the space station for the Astronaut Office, working closely with all the international partners and supervising assigned astronauts and engineers. From January 2011 through August 2013, Fisher served as an ISS Capsule Communicator (CAPCOM) working in the Mission Control Center and was also the lead CAPCOM for Expedition 33. Currently, Fisher is a management astronaut, working on display development for the Orion Multi-Purpose Crew Vehicle (MPCV) and supports European payloads for the ISS Integration branch.



Ludovico Gippetto, nato a Palermo nel 1966. Studia Architettura all'Università di Palermo. Si abilita all'esercizio della professione ma si dedica principalmente come Project Manager di Eventi Culturali e cacciatore di opere d'arte trafugate. Master in Marketing e Management.

Esperto in relazioni internazionali, è stato responsabile di Unità Operative per le relazioni esterne, rapporti con i giornalisti, media, social network, Enti pubblici e privati, impaginazione e grafica del sito web e funzioni di cerimoniale. Direttore artistico, e curatore di mostre d'arte, simposi di scultura e convegni.

Scultore e fotografo. Autore e curatore, di numerose pubblicazioni e monografie d'arte.

Assistente alla Cattedra di *Storia e Tecnica dell'Editoria,* presso l'Istituto Superiore di Giornalismo dell'Università di Palermo (1994/1997). Scrive regolarmente su: ArtsLife (Milano); Sicilia Informazioni – Quotidiano di Sicilia; Italia Informazioni e Now Italy.

Cerimoniere del Dipartimento cerimoniale del Gruppo di Coordinamento Tecnico-Operativo in occasione delle *Universiade Sicilia '97*. Consulente del Sindaco di Corleone (Pa) per la riqualificazione del patrimonio culturale, storico e artistico (2007/2008). Ha curato e prodotto, nel 1995, la monumentale opera scultorea in pietra arenaria siciliana, dell'artista Medhat Shafik dal titolo "Il Muro del Silenzio" ed "I percorsi dell'acqua", in occasione della XLVI^ Biennale di Venezia - Padiglione Egitto premiato con il "*Leone D'Oro*". Collaboratore parlamentare del presidente dell'Assemblea Regionale Siciliana, per le attività culturali (1998/2001). Attualmente è responsabile della comunicazione presso il Riso, Museo d'arte contemporanea della Sicilia

Esperto sui temi della sicurezza, trafugamenti di opere d'arte ed illecita commercializzazione. Ha organizzato numerosi eventi anche in collaborazione con l'Arma dei Carabinieri Tutela Patrimonio Culturale e della Guardia di Finanza. Fondatore e presidente, del Centro Internazionale Multimediale d'Arte Contemporanea *Extroart* e della *Fondazione Wanted Palermo*. Ideatore e responsabile del programma di tutela e prevenzione del patrimonio culturale denominato "*WANTED ...presi per il verso giusto*", finalizzato al contrasto della commercializzazione illecita di opere d'arte. Sull'argomento è stato relatore in conferenze, lezioni e seminari presso: Università, Istituzioni pubbliche sia in Italia che all'estero, e nelle sedi diplomatiche degli Istituti Italiani di Cultura (Amburgo, Bratislava, Copenaghen, Dublino, Innsbruck, Praga, Los Angeles, Melbourne, Monaco di Baviera, Nitra, San Francisco, Sydney, San Francisco, Buenos Aires, etc.)

Abstract

Ludovico Gippetto (Italy)

"Furti ad Arte: Det_Tagli della Natività di Caravaggio"

La tutela del patrimonio culturale come anima profonda di un popolo e dell'umanità intera.

"Wanted ...presi per il verso giusto" è una campagna di sensibilizzazione a favore del patrimonio culturale, che nasce a Palermo nel 1992 dall'emozione dell'onda lunga di una città "bombardata" in tempo di pace. Il progetto prevede la realizzazione di interventi, seminari, mostre e lecture multimediali, sia in Italia e all'Estero, finalizzati a dare ad ogni reperto archeologico (sia marino che terrestre) ed a tutte quelle opere d'arte trafugate, la possibilità di essere riconosciute, ritrovate e ricollocate nella loro sua giusta sede d'origine.

Il progetto "Wanted ...presi per il verso giusto" si basa sul principio, che se "la pubblicità è l'anima del commercio" le nostre azioni, anch'esse pubblicitarie, sono un deterrente per l'illecito commercio. La diffusione sempre più capillare, delle riproduzioni fotografiche (cartoline, locandine, manifesti e gagdet) intendono sia creare un momento di disturbo nell'illecito atto della compra/vendita, sia al ritrovamento del bene trafugato, grazie a segnalazioni anonime.

Divulgare le riproduzioni fotografiche, come sostengono le statistiche delle Forze di

Polizia, favoriscono il recupero, poiché l'oggetto d'arte diventa immediatamente riconoscibile.

Con la relazione multimediale: ***"Furti ad Arte: Det_Tagli della Natività di Caravaggio"*** intendiamo ripercorrere i diversi momenti del famoso dipinto di Michelangelo Merisi: dall'appropriazione illecita, con la ricostruendone delle tappe principali del furto; le controverse dichiarazioni dei numerosi pentiti; l'ipotesi di una scellerata follia di sezionare la tela in diverse parti per agevolarne la vendita, così anche da non essere facilmente identificabile; la teoria del "personaggio misterioso"; l'acquisizione da parte della mafia, e perché no, le ragioni che ci vogliono far ben sperare, in un prossimo rientro nella sua giusta collocazione all'interno dell'Oratorio di San Lorenzo di Palermo.

Manipulation of Leukocyte Cell Membrane for Drug Delivery Purposes

Molinaro R.,[1,2] Parodi A.,[1] Corbo C.,[1,3] Taraballi F.,[1] Minardi S.,[1] De Rosa E.,[1] Agostini M,[2] Tasciotti E.[1]

[1]Houston Methodist Research Institute, Department of Nanomedicine, Houston, TX, United States

[2] *Clinica Chirurgica I, Dipartimento di Scienze Chirurgiche Oncologiche e Gastroeterologiche, Università di Padova, Via Giustiniani 2, 35128 Padua, Italy*

[3]*Fondazione IRCCS SDN, Via Gianturco 113, 80143 Naples, Italy.*

Statement of Purpose: In the last decades many efforts have been focused on the development of nanoparticle-based delivery systems to control the transport of therapeutics and biologicals[1] in order to reduce the toxicity and improve the efficacy of a wide range of drugs. In this scenario, multifunctional nanoparticles have been developed to improve delivery, therapeutic efficacy, and ultimately patient outcome by for example devising nanoparticles with long-circulation, targeting, fusogenic and theranostic properties. However, each new functionality elevates the product complexity and cost, as well as the regulatory barriers. Bio-inspired approaches emerged to synthesize multifunctional materials able to properly interact and negotiate the transport through different compartments of biological systems[2, 3]. Based on the properties that leukocytes exert in physio-pathological conditions, here we show how leukocyte membrane can be manipulated and utilized as proteolipid material to formulate a new generation of drug delivery systems, namely leukosomes. Leukosome is a novel hybrid formulation that combines some of the **leukocyte** properties of biocompatibility and targeting of inflamed vasculature, with **liposome** ability to load and release a given payload in a controlled fashion. This approach will be developed in function of the transferability of surface leukocyte proteins that guarantee biological self-tolerance (e.g. CD47 and MHC-1) and favor adhesion to inflamed endothelium (e.g. LFA-1, Mac-1).

Methods: Leukocyte membrane proteins were extracted through a discontinuous sucrose gradient, as reported in 4, and then used to hydrate the lipid film made by choline-based phospholipids and cholesterol according to the established thin layer evaporation method. We investigated the enrichment efficiency of macrophage-derived

membrane proteins and subsequently their status and orientation once inserted into leukosome bilayer. Carrier physical-chemical features (size, zeta potential and polydispersity index, morphological analysis, drug loading efficiency and release) were determined. Moreover, functional *in vitro* and *in vivo* evidences of the superior ability of the leukosomes to avoid sequestration and clearance by the mononuclear phagocytic system and to target inflamed tumor-associated vasculature were provided.

Results: We demonstrated bilayer enrichment with leukocyte membrane proteins (Fig. 1), and the presence of the key players involved in leukosome self-tolerance (i.e. CD-45) and adhesion (i.e. LFA-1 and Mac-1). Their assembly with synthetic phospholipids allowed us to synthesize homogeneous, spherical shaped, 120 nm-sized, and negatively charged (-16 mV) leukosomes. In addition, after their incorporation into leukosome bilayer, we showed how leukocyte membrane proteins maintain their functional status and correct orientation. These vesicles showed drug loading efficiency and release properties similar to liposomes, and are provided of *in vitro* and *in vivo* leukocyte-like biological functions in terms of self-tolerance and increased adhesion to inflamed vasculature.

Conclusions: This study provides the rationale to synthesize personalized delivery systems starting from a complex biological material, the leukocyte cell membrane, and to expand the classical active targeting-based approaches through a biomimetic strategy that exploits the natural features of the immune cells. Leukocyte cell membrane, in fact, represents a material that contains a unique arrangement of lipids, proteins and sugars that to date is impossible to reproduce. The approach we show here permits the transfer of more than 150 leukocyte membrane proteins to a synthetic carrier in a one step synthesis without requiring any additional post synthesis modification and purification. In addition, considering that the inflammation represents the *conditio sine qua non* the leukosomes can exert their biological action, we envision the use of this technology in other major inflammatory-based pathologies like infections and cardiovascular diseases.

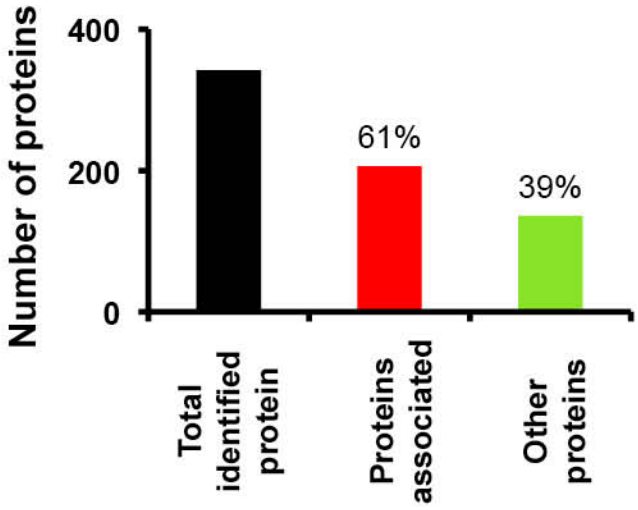


Figure 1. Classification of leukosome proteins. Number of total and plasma membrane associated proteins.

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Education

M. Sc. University Magna Graecia of Catanzaro - Italy (Pharmacy)

Ph.D.

PostDoc University Magna Graecia of Catanzaro - Italy (Pharmaceutical Sciences)

Houston Methodist Research Institute, Houston, Texas

Biography

Dr. Molinaro earned his Master degree in Pharmacy at University Magna Graecia of Catanzaro - Italy and a Ph.D. in Pharmaceutical Sciences in 2013 under the supervision of prof. Massimo Fresta. His PhD thesis was focused on the design and development of asymmetric vesicular carriers for gene delivery. He spent the last year of his Ph.D. program at the department of Nanomedicine of Houston Methodist Research Institute under the supervision of Prof. Mauro Ferrari. He is currently a postdoc fellow under the mentorship of Dr. Ennio Tasciotti. His research is focused on the design and development of synthetic and bio-inspired drug delivery systems (polymeric nanoparticles, vesicular carriers, hybrid particles) for different applications (from transdermal to systemic administration).

Description of Research

Dr. Molinaro's research is focused on:

- synthesis and functionalization of conventional nanoparticles for targeted drug delivery systems
- development of bio-inspired vescicular carriers for the selective targeting of inflamed tissues
- loading of active molecules (genetic material, proteins, chemotherapeutics) into carriers and their physical-chemical and biological characterization.

Major Areas of Research

Nanotechnology, drug delivery.

Selected Publications

Paolino D., Cosco D., Molinaro R., Celia C. and Fresta M. Supramolecular devices to improve the treatment of brain diseases. Drug Discov Today. 2011;16(7-8):311-24.

Cosco D., Molinaro R., Morittu V.M., Cilurzo F., Costa N. and Fresta M. Anticancer activity of 9-cis-Retinoic Acid encapsulated in PEG-coated PLGA-nanoparticles. J. Drug Del. Sci. Tech., 2011; 21(5):395-400.

Molinaro R., Wolfram J., Federico C., Cilurzo F., Di Marzio L., Ventura C.A., Carafa M., Celia C. and Fresta M. Polyethylenimine and chitosan carriers for the delivery of RNA interference effectors. Expert Opinion on Drug Delivery. 2013; 10(12):1653-68.

Joy Wolfram, Krishna Suri, Yi Huang, Roberto Molinaro, Carlotta Borsoi, Bronwyn Scott, Kathryn Boom, Donatella Paolino, Massimo Fresta, Jianghua Wang, Mauro Ferrari, Christian Celia, and Haifa Shen. Evaluation of anticancer activity of celastrol liposomes in prostate cancer cells. J Microencapsul. 2014; 31(5):501-7.

Corbo C, Parodi A, Evangelopoulos M, Engler DA, Matsunami RK, Engler AC, Molinaro R, Scaria S, Salvatore F, Tasciotti E. Proteomic profiling of a biomimetic drug delivery platform. 2014. [Epub ahead of print]

COM.IT.ES ***Nota Riassuntiva di Ricerca***

Teaching, Learning and Collaboration: the use of a Collaborative Learning Environment (TRACS) as facilitator of Foreign Language Learning in Hybrid Italian/French Courses

Abstract:
A consortium of universities including, MIT, Stanford, University of Michigan, and Indiana University, was exploring alternatives with an initial proposal to build a new course management system that would allow the university to shape and customize the software without restrictions. They had all built separate in-house systems for course management, learning, and collaboration. Realizing that they were duplicating much of their efforts, they decided to pool their resources and combine the best aspects of each of their systems into a new one that they would share at no cost to the rest of the higher education community. The new system is called Sakai, and version 1.0 became available to the public in July of 2004. This open source learning management project started with four institutions in January 2004 and has grown. During the Fall 2005 semester, I belonged to the pilot group of Professors for the migration project. With TRACS the Texas State Foreign Language teacher can create web-based materials, add links, download and upload documents easily, as well as create a vast database of material supporting students' learning, researching and information gathering, as well as reading of web newspaper articles, journal articles or actual news in the foreign language, listening to Radio and even watch TV programming in the target language. TRACS allows teachers to build a "virtual" space where the students can gather pertinent vocabulary, idioms, grammar, cultural notes, and background references in the foreign language. Foreign language teachers can organize links to web sites of any kind (cultural, linguistic, political, sociological, gastronomic and/or historic) and set up specific reading assignments requesting the student to do certain required tasks. Students can directly complete the assignments online, so that they can access their assignments, the background material, the links, and their own completed assignments, as well as their classmates, from any computer. TRACS can also be used as a communication tool, as the teacher can communicate with single users, all users, instructor assistants or more. TRACS is a conveniently organized course management tool, as well as an excellent source for information gathering and cultural exposure in the target language. My research explores how this combination of calm technology design and the integration of Digital Media facilitate individual learning by connecting second language learners with native speakers of the target language and become a linguistic initiative being shaped in the Department of Modern Languages at Texas State University, where the continuum between technology integration and calm technology that the term "ubiquitous computing" evokes are applied.

Biography:

Dr. Moira Di Mauro-Jackson 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. Since 1988, Moira, a native Italian, has been teaching French and Italian (since 2005) at Texas State University in San Marcos.

Wharton's jelly stem cells: their journey from umbilical cord to the diseased organs. Defining their in vivo role and uncovering their therapeutic potential

Giampiero La Rocca, Ph.D.

Department of Experimental Biomedicine and Clinical Neurosciences, University of Palermo (Italy); Euro-Mediterranean institute of Science and Technology,

Mesenchymal stem cells derived from Wharton's jelly (WJ-MSCs) of human umbilical cord recently emerged as promising tools for cellular therapy due to their ability to differentiate into diverse cell types and their immunomodulatory features. Neural cells, liver cells, pancreatic beta cells, may successfully be derived from WJ-MSCs. Few data are present in literature on the expression of immunomodulatory molecules in umbilical cord and cultured WJ-MSCs, an aspect of key importance in cell therapy applications. Also, few data refer to the maintenance of expression of immunomodulatory molecules into the mature cell types differentiated from WJ-MSCs.

The aim of our research is to use WJ-MSCs to obtain mature cells of different adult organs, investigating the acquisition of mature features of the desired cell type, together with the ability to maintain their immunomodulatory and anti-inflammatory activities upon differentiation and transplantation. This was accomplished as a global effort to characterize the differentiability of such cells and their behaviour in co-culture experiments with human immune cells, an essential information to be gained before attempting transplantation. The investigations were also carried out in "in vivo" specimens of umbilical cord to ascertain the levels of expression of different markers and their maintenance alongside cell culture, ex vivo expansion and differentiation.

Our overall results showed that WJ-MSCs from cords at different gestational ages may be readily differentiated towards multiple cell types (osteoblasts, chondrocytes, hepatocytes), with multiple features of the adult differentiated cells. Differentiated WJ-MSCs maintain the immune privilege of undifferentiated ones. This suggests that they remain hypoimmunogenic and may be used for allogeneic transplantation, even without concurrent immunosuppressants administration. Immunomodulatory molecules expression has been also assessed in the primitive umbilical tissue, and this further opens new paths on the in vivo role of these cells in fetal development, immune

recognition and defence of the fetus from mother-borne immune cells. In vivo experiments further provided new insights on the use of undifferentiated cells in co-transplantation experiments in a model of type I diabetes.

This work was supported by grants to GLR from Università di Palermo (FFR 2012), and from the Istituto Euro-Mediterraneo di Scienza e Tecnologia (IEMEST)

Biosketch

Giampiero La Rocca is senior lecturer of Human Anatomy at the University of Palermo, Italy, and head of the research group on "Stem Cells and Tissue Repair" at the Euro-Mediterranean Institute of Science and Technology (IEMEST). He graduated in Biological Sciences at university of Palermo, and received his PhD in Cell and Developmental Biology. He is a member of the Scientific Board of Auxocell Laboratories, Inc., and member of the International Placenta Stem Cell Society (IPLASS). He is founding member of the Perinatal Stem Cells Society and member of the editorial board in 5 international journals. He edited multiple special issues on placenta/umbilical cord stem cells in peer reviewed journals. His current interests are focused on the definition of the immunomodulatory properties of WJ-MSCs, either differentiated or undifferentiated cells, to be used in cell therapy applications for end stage liver diseases (in collaboration with ISMETT-UPMC) and diabetes (in collaboration with UTMB Galveston).

NANOTECHNOLOGY AND SUSTAINABLE ENERGY

Patrizia Livreri
DEIM - Department of Energy, Information Engineering and Mathematical models,
University of Palermo
Viale delle Scienze, Bldg. 9 - 90128 Palermo (Italy)

Nanotechnology, with its unique capability to fabricate new structures at the nano-scale, has already produced new materials and devices.
Sustainable energy is actually based on new nanotechnology-derived materials and will allow us to face the great energy and sustainability challenges of today and tomorrow, affording the production and wise use of clean energy obtained from renewable sources. Herein, the recent experimental activities carried out by the Master Degree on "Nanotechnologies for sustainable energies" research group, whose I'm the coordinator, will be reported:

- **Fabrication and Electrical and Optical characterization of Thin-film Photovoltaic Cells based on Hydrogenated amorphous and crystalline silicon**.
  Plasma-enhanced Chemical Vapor Deposition and Inductively Coupled Plasma Chemical Vapour Deposition were employed in order to obtain hydrogenated amorphous silicon (a-Si:H) thin films. After their fabrication, the photovoltaic cells were electrically and optically characterized. Measurements of I-V characteristics and aging were performed.
- **Solar organic-based flexible and efficient cells**.
  The possibility to fabricate photovoltaic devices at low temperature allows the use of plastic substrates. The performances of devices built in bulk heterojunction were improved thanks to the use of carbon nanotubes instead of fullerenes.
- **Electrodeposition and Characterization of Nanostructured CZTS for thin film solar cells**.
  Copper zinc tin sulphide (CZTS) is one of the most inexpensive and interesting semiconductor employed in solar cells: it is conductive, highly transparent, flexible and low cost. CZTS was fabricated via electrochemical deposition. Nanostructured thin films with different composition were obtained and characterized using several techniques (EDS, SEM, RAMAN, XRD).
- **Electrochemical and chemical synthesis of CIS/Zn(S,O,OH) for thin film solar cells**.
  Electrodeposition of CuInSe2 thin films on molybdenum thin foil substrates was performed. Films were characterized by photoelectrochemical and I-V measurements, while structural characterization was carried out by XRD and Raman spectroscopy. Results show the good quality of the grown films.
- **Fabrication and Characterization of Dye-Sensitized Solar Cells.**

Among the next-generation solar cells, a predominant role is played by Dye sensitized solar cells (DSSC) based on ruthenium complexes as sensitizers. Ruthenium DSSCs were produced and tested, showing a maximum conversion efficiency between 11% and 12%.

Biosketch

Patrizia Livreri PhD, Professor of Electronics at the Engineering School of the University of Palermo, is the scientific director of the "Nanotechnologies and Nanomaterials Laboratory – BCNANOLAB. She is working at the Joint Research Unit on Space and Security with CNR and Agenzia Spaziale Italiana. She is involved in several international research projects on nanotechnologies, and she is the coordinator of the Master's degree in "Nanotechnologies for sustainable energies". She serves as member of Scientific Committees and as board member in PITECNOBIO-Consorzio di Ricerca per lo sviluppo di Piattaforme Tecnologiche Biomediche. She is the advisory of the "Commissione Parlamentare Europa" of the Sicilian Government. Project Leader and Training Manager of the High-Technology District for Cultural Heritage. Patrizia Livreri is author of more than 100 papers.

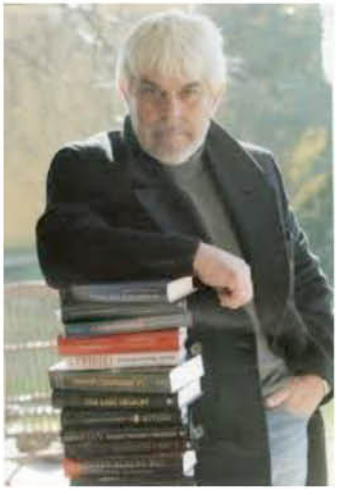
Valerio Massimo Manfredi

Valerio Massimo Manfredi the Italian archaeologist and writer, after completing a degree in classics at the University of Bologna immediately entered the world of archaeology, specialising in the topography of the ancient world at the Catholic University in Milan.
He taught at the same university from 1980 to 1986 before beginning an intense academic career, first at the University of Venice (1987) and later at prestigious American universities and then at Loyola University of Chicago, the Ecole Pratique des Hautes Etudes at the Sorbonne in Paris and Milan's Bocconi University.

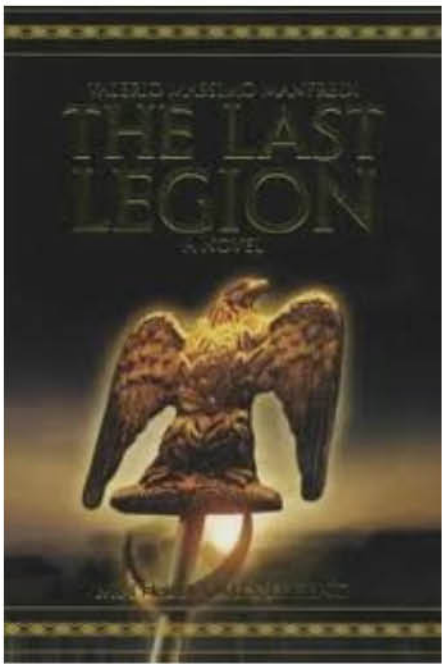
During the seventies and eighties he planned and conducted the *Anabasis* expeditions for the field reconstruction of the route of the retreat of the Ten Thousand, and was involved in numerous other excavations including Lavinium, Forum Gallorum and Forte Urbano in Italy. He was also part of prestigious international digs, such as Har Karkom, in Israel, and the mapping and relief, with Timothy Mitford, of the site of the "Trophy of the Ten Thousand" in eastern Anatolia (2002). He has given lectures and seminars in some of the most prestigious universities such as New College, Oxford, UCLA, a keynote address at the National University of Canberra in Australia, Lectio magistralis at the University of Havana in Cuba, the Universidad de Antioch, Medellin (Colombia), Universidad de Bilbao, Universidad Internacional Menendez Pelayo (Tenerife) and many others.

He has published numerous articles and academics papers and written a number of highly successful novels that have been translated all over the world (with total worldwide sales of about twelve million copies). He has been the recipient of any awards, including, in 2003, his appointment as a Commander of the Republic "motu proprio" by President Carlo Azeglio Ciampi, the Corrado Alvaro Rhegium Julii Prize (2003) and Booksellers of the City of Padua prize, the Hemingway Prize for fiction in 2004, the Bancarella Prize in 2008 and the Scanno prize in 2010.

He is also the author of scripts and screenplays for film and television. His *Aléxandros* trilogy was acquired by Universal Pictures for a film production and Dino De Laurentiis produced *The Last Legion* (starring Ben Kingsley, Colin Firth, Aishwarya Rai and Thomas Sangster, directed by Doug Lefler). He also wrote the screenplays for *Marco d'Aviano* (in preparation) and *Gilgamesh* (in preparation). He also adapted for the cinema Marguerite Yourcenar's *The Memoirs of Hadrian* for John Boorman.



He works as a science contributor for a number of newspapers and magazines both in Italy and abroad and has successfully presented the TV series *Stargate – linea di confine* and *Impero*



Rino Martinez

Cantautore e Missionario laico - fondatore ONG Ali per Volare

Rino Martinez, fiero di essere Palermitano, negli anni '80 ha raggiunto la massima notorietà internazionale partecipando al Festival di Sanremo (1982).

E' un umile eroe dei nostri giorni, dal 1998 offre il suo instancabile impegno per la difesa dei diritti umani e per gli ultimi, rifugiati, bambini soldato, bambini di strada e impoveriti della terra. Le sue risorse umane sono sostenute dall'amore sincero e genuino verso il prossimo, con particolare dedizione verso i bambini. Grazie al suo indomabile altruismo, alcuni paesi africani hanno potuto ottenere reti idriche di acqua potabile ma ancor di più è riuscito a far costruire e sostenere orfanotrofi in Congo - vedi: "Padre Pino Puglisi" a Pointe Noire; "Notre Dame de Nazareth" a Brazzaville e A.O.E.S. a Kinshasa (RDC).

Con "Ali per Volare", dal 2007, con risultati eccellenti, è promotore di una campagna di azione sanitaria all'interno della grande foresta equatoriale congolese a favore del popolo più antico della terra "I Pigmei" a rischio estinzione; progetto esteso al popolo Bantu.

Primo uomo bianco al mondo che ha deciso di attraversare le paludi e le zone più inaccessibili e impervie della terra pur di arrivare nei luoghi dove alcune terribili patologie come Pian, Lebbra ed Ebola, stanno decimando intere popolazioni e soprattutto bambini.

Rino, ha fin qui realizzato e guidato con vocazione e convinzione, all'interno della foresta equatoriale (nelle regioni Likouala e Sangha) le missioni - "Cuore per la vita" del 2007/ 2008 /2009/ 2010/ 2011/ 2012/ 2013/ 2014 - che hanno permesso di vaccinare e curare oltre duecentomila vite umane. "Missione Cuore per la vita" è gratificata dall'Alto Patronato del Presidente della Repubblica Italiana.

Quest'anno Rino Martinez ha lanciato un nuovo format culturale <<Concert-Theater>>, dal titolo: "Umanità dove sei? L'Africa di Rino Martinez" che spazia tra musica, teatro, reportage e testimonianze - soggetto ispirato alla sua vita artistica e missionaria. In questo racconto così struggente e reale, l'arte della parola parlata, delle immagini, delle note e melodie musicali, diventa messaggio e testimonianza per affermare il diritto alla vita e al rispetto dell'umanità che soffre. L'autore è riuscito a coinvolgere e

sensibilizzare artisti, donne e uomini di cultura e valore umano, tra questi - Cinzia TH Torrini, Sebastiano Somma, Enzo De Caro, Paolo Vallesi, Luca Barbarossa, Rosario Carello, Stefania Petyx, Jimmi Ghione, Luca Abete e Mariella Nava. Le canzoni, i monologhi, le testimonianze e le immagini di questo straordinario documento, accompagnano lo spettatore in un cammino

dove il palcoscenico e la platea s'incontrano, s'intrecciano, si integrano e diventano entrambi protagonisti di emozioni e percorsi di vita che conducono al desiderio di pace e amore tra i popoli. Rino, una vita spesa a favore della legalità, della solidarietà, dei diritti umani e della giustizia; un uomo, un artista certamente unico nel suo genere, coinvolgente che canta, vive nella foresta e racconta con autentica generosità e impegno - la vita, quella vita che lo vede ancora protagonista nel cuore dell'Africa, di un progetto sanitario e umanitario, teso a salvare i PIGMEI dall'estinzione. In ogni parte del mondo, Rino intende testimoniare con fede e competenza - il suo amore per gli ultimi e dimenticati della terra.

L'Associazione Missionaria Interculturale "Ali per Volare" ONLUS è stata fondata dal Cantautore Rino Martinez per promuovere iniziative culturali ed opere umanitarie concrete a favore dei Bambini abbandonati, orfani, sfruttati, ex bambini soldato, malati di AIDS/Sida, Leucemia, Malaria etc, non tralasciando tutte le vittime delle terribili guerre che si sono drammaticamente ripetute negli ultimi decenni in Africa, terra di povertà e di miseria dove, ancora oggi, muoiono oltre trentamila creature innocenti al giorno.

"Ali per Volare" ha come missione ed obiettivo primario "Aiutare i Bimbi che Soffrono" attraverso interventi concreti e progetti finalizzati, soprattutto, ai bisogni vitali ed urgenti.

Promuove scambi culturali e di partenariato, tesi a far conoscere, in modo costruttivo, la cultura e i drammi derivanti dalle guerre e dalle sopraffazioni subite da paesi martoriati come l'Africa, utilizzando il linguaggio universale della musica, delle immagini, della fotografia, dei libri, delle opere multimediali, dei documenti video, cortometraggi, film e carta stampata con chiari riferimenti e contenuti legati ai temi della solidarietà, della pace, della giustizia e della libertà, rispettando il dialogo interculturale ed interreligioso, nel rispetto della dignità di ogni persona sulla terra.

L'altra prerogativa fondamentale è quella di restituire la dignità dovuta ai paesi poveri, con interventi di medicina umanitaria per il diritto alla salute per tutte le persone gravemente malate, senza discriminazioni di sesso, etnia, religione e credo politico.

ALI PER VOLARE

Fondatore : Rino Martinez
Via Cesare Terranova n. 8 – cap 90131 – Palermo (Italia)
Tel. Cell.+39.328.7412927 - - **Codice Fiscale: 97217820824**
www.alixvolare.it – e-mail: rinomartinez1@tin.it

Al Signor Comandante Vincenzo Arcobelli
Presidente del COM.IT.ES
Circoscrizione consolare di Houston

e p.c.

Alla Dott.ssa Elena Sgarbi
Console Generale d'Italia a Houston

Al Dott. Andrea Duchini
Direttore del Comitato Scientifico Organizzatore
X Conferenza dei Ricercatori Italiani nel Mondo

Gent.mo com. Arcobelli,

Grazie per avermi invitato a questa importante conferenza che gratifica l'operato missionario e sanitario **"Missione cuore per la vita"**, che porto avanti da tanti anni all'interno della foresta equatoriale Congolese nella mia qualità di fondatore della ONG Ali per Volare Onlus, a favore del popolo più antico della terra, **"i Pigmei"**, a rischio di estinzione.

Mi auguro che nel documento finale della conferenza si possa auspicare l'istituzione di un gruppo internazionale di ricerca collaborativa che possa fare nascere, col tempo, una iniziativa tesa a garantire uno sviluppo sanitario e umanitario condiviso in una delle aree africane di più difficile situazione sanitaria. Nello specifico, propongo alla Vostra attenzione la stipula di una lettera di intenti sulla creazione di un **"Centro Raccolta Dati Sanitari e Studi Epidemiologici"** da realizzare presso i distretti delle due regioni situate a nord della Repubblica del Congo - **(Likouala e Sangha)**, aree maggiormente colpite da patologie come: **PIAN (Framboesia) – LEBBRA – TBC – HIV/SIDA – MALARIE – EBOLA e tutte le patologie derivanti dal Paludismo.** In questi vasti territori della grande foresta equatoriale, le gravi infezioni sono in costante aumento per mancanza d'igiene, prevenzione ed acqua potabile. Il Centro Raccolta Dati dovrà avvalersi di nuove sofisticate tecnologie satellitari in ambito medico scientifico per la diagnosi, prevenzione e cura delle malattie a più alta incidenza; una struttura che consenta a distanza di monitorare pazienti di questa area geografica inaccessibile e remota, al fine di migliorare l'assistenza per la consultazione remota con medici ed esperti Italiani e Americani a sostegno e supporto di medici Congolesi **con l'utilizzo e l'applicazione di telemedicina di alta tecnologia**.

Il progetto servirà a sensibilizzare, informare ed educare i Pigmei e Bantu autoctoni, attraverso innovativi ed efficaci processi di comunicazione di massa, nel rispetto delle tradizioni e dell'ambiente. Verranno attivati canali per il trasferimento di informazioni per

personale sanitario specializzato ed inoltre grazie all'attivazione satellitare sarà possibile attivare una serie di interventi medici come il **teleconsulto, la teleradiologia, la telechirurgia;** tutto ciò per migliorare nel tempo lo stato di salute e la qualità della vita del **popolo autoctono**, avvalendosi di personale altamente qualificato.

Dal 2000 a oggi, tutte le attività svolte da Ali per Volare sono compatibili con i vincoli e le specifiche direttive dell'Organizzazione Mondiale della Sanità. La particolare area geografica in cui si svolge l'attività sanitaria e umanitaria offre all'innovativo progetto la straordinaria opportunità di **fare ricerca e analisi su dati clinici, con particolare riferimento alle epidemiologie del popolo più antico della terra "i Pigmei", ad oggi molto poco accessibili alla comunità scientifica internazionale.**

La Decima Conferenza dei Ricercatori Italiani nel Mondo, mi permetterà di fare un'ampia e concreta relazione che, spero, consentirà di aprire nuove e significative pagine da offrire all'umanità che soffre.

Le porgo i miei più cordiali saluti.

Rino Martinez Gaspare
Presidente e fondatore Ali per Volare Onlus

Gianantonio 'Jonathan' Michelon Ph. D.

2816 Olympia Drive, TX 75052

(972) 606-0886 h (210) 685-2704 jonathanmichelon@letu.edu

Employment

Education Lead Faculty LeTourneau University,

Dallas - Bedford (TX) October 2009- present

Learning Framework & Human Development Faculty East Field College,

Mesquite (TX) August 2010 - present

Adjunct Professor in Political Science and International Relations St. Mary's University,

San Antonio (TX) August 2003 – December 2009

Director of Educational Initiatives Focolare Movement, Southwest Region USA

January 2000 - present

Athletic Director/Teacher St. Leo the Great Elementary School,

San Antonio (TX) November 2000 - June 2002

Substitute Teacher Holy Cross High School, San Antonio (TX) March 2000 - October 2000

Training Generalist, Holt Training System (Internship), San Antonio (TX) 2000

Marketing Manager Azur, Incisa Valdarno (Italy) September 1997 – December 1999

Italian Teacher/Youth Coordinator Mariapolis Luminosa, Hide Park (NY)

November 1995 – September 1997

Youth Services Coordinator/Advisor POLO (European Union funded project), Carmignano di Brenta (Italy) November 1992 – November 1995

Law and Economics Professor D. Sartor (Adult Students) High School, Castelfranco Veneto (Italy) September 1991- November 1995

Education

Ph.D. in Education, Concentration in International Education and Entrepreneurship,

University of Incarnate Word, San Antonio (TX) December 2009

Dissertation: The Focolare Educational Model at Sophia Higher Learning Institute for Cultural Studies.

Course of Specialization in Business Organization ENAIP, Padua (Italy)

March 1992 November 1992

Course of Specialization in Business Organization CUOA, Vicenza (Italy)

October 1991 December 1991

B.A. & M.A. in Political Science, University of Padua, Padua (Italy) July 1991

Dissertation: Technological Innovation and Formative Needs. The case of the Small Businesses from Padua (Italy) and the Niederbayern (Germany).

High School Diploma Specialization, Duca degli Abruzzi High School, Treviso (Italy) 1985

High School Diploma in Teacher Education, Maria Assunta High School, Castelfranco Veneto, Italy, 1984

Research Focus Areas

Comparative Education: System of Beliefs, Intercultural Education, Continuing and Comparative Education, Teaching Philosophies.

Educational Models: Comparative Educational Models

Volunteer & Humanitarian Work

Red Cross Volunteer with students and friends, help in the family member identification unit for Katrina & Rita Evacuees housed with Red Cross on Kelly Air Force Base, Fall 2005

Volunteer for Nursing Homes accompany students in visiting nursing homes in the San Antonio areas November 2001 – November 2009

Volunteer for Disabled people organize and visit with students disabled people at home 1984 – 1994

Conferences, Presentations, & Guest Lectures

- "The Economy of Communion Project" Presentation in Lecture Series Trinity University Spring 2008.
- "The Economy of Communion Project" Guest Speaker for Graduate and Undergraduate Classes at Saint Mary's University November 2004 – November 2009.
- "Searching for the Common Good" Moderator for panel, Saint Mary's University

October 2009

- "The Genocide in Darfur" Moderator for panel, Saint Mary's University October 2007
- "Leading through the eyes of Mary" The University Ministry Fall Seminar Series, Saint Mary's University September 2005.
- "Have Passport, Will Engage: International Opportunities" Panelist President's Peace Commission, Saint Mary's University October 2004.
- "Interdependence Day" Promoter and Moderator, Saint Mary's University September 2004

Course Listing

"Educational Psychology" 2010

"Action Research"2010

"Research in Education" 2010

"Learning Frameworks in Education" 2010

"Great Decisions in International Relations" 2005, 2006 and 2007

"High Technology and Society" 2005, 2006, 2007, 2008 and 2009

"Economy of Communion" 2005, 2006 and 2007

Research, Mentoring & Advising

8th Annual Undergraduate Research Symposium Mentor, Saint Mary University April 2008

Sarah Roche "Poverty Tourism "

Political Science Honor Society Advisor, Saint Mary University 2003-2007

Youth for a United World Advisor, Saint Mary University 2005-2008

Languages

English (native fluency) Italian (mother tongue)

Spanish (working knowledge)

International Experience

Castelfranco Veneto, Treviso DIHR 2007

Bruxelles, Belgium European Center for Human Resources 2007

Malaga, Spain Intercultural Exchange Representative 1992

London, United Kingdom Business Visit 1992

Vilshofen, Germany Intercultural Exchange Representative1985-1994

Vechta, Germany Intercultural Exchange Representative 1985 - 1986

Learning from Nature: Biologically Inspired Design of Materials for Tissue Engineering

Several medical applications for bone and cartilage forming materials have emerged in America's aging and enlarging population, including osteoporosis, fracture healing, and spine fusion applications. However, no reliable osteogenic or chondrogenic device has been developed and applied clinically with satisfactory cost, efficacy, and safety.
Biomimicry of the extracellular matrix is an emerging field for the design of materials for tissue engineering, which enables to obtain scaffolds mimicking the complexity of the biological structures. In fact, the ideal scaffolds should be able to elicit the natural self-healing capabilities through a seamless integration within the surrounding tissues. The microenvironment made by the material plays a crucial role in this self-healing. Biomaterials mimicking the chemical, physical and topographical cues of the target tissue can be further engineered with nanostructured delivery systems for the controlled release of growth factors to recruit, retain and direct the differentiation of several populations of host cells during the regenerative process. Bio-hybrid materials based on collagen and biomimetic hydroxyapatites have been demonstrated to be materials of election in the repair of fractures. In these materials, the organic matrix acts as a template for the deposition of the mineral phase, recapitulating the key steps of the natural biomineralization process.
Interface tissue engineering (e.g. regeneration of osteochondral region) represent a new challenge in the field of regenerative medicine, as in damaged tissue interfaces there is the need to regenerate two different and adjacent tissues, simultaneously (e.g. the cartilage and the underlying trabecular bone). In the regenerative approaches targeting these body districts, biologics represent a fundamental ally. Innovative nanostructured delivery systems have been also combined with biomimetic scaffolds to ensure precise regulation of the concentration, temporal and spatial gradients of bioactive molecules through the three-dimensional scaffolds, as it is crucial in enhancing the signaling capability of the materials.

Biography:
Silvia Minardi received her Master of Science in Biotechnology from the University of Milan- Bicocca in January 2011. In February 2011, she won a pre-doctoral fellowship of the National Research Council of Italy, and joined the team of Bioceramics and Bio-hybrid Materials at the Institute of Science and Technology for Ceramics – National Research Council of Italy in Faenza (ISTEC-CNR). During her PhD in Chemical Sciences she has been a visiting research fellow in the Department of Nanomedicine of the Houston Methodist Research Institute (HMRI), working in the lab of Dr. Tasciotti. Silvia recently finished her PhD in

Chemical Sciences (University of Bologna) and is currently a Post-doctoral fellow in the department of Regenerative Medicine of the HMRI.

Transformation of Human Hepatocytes Originated From Cirrhotic Liver in Hepatocellular Carcinoma

Mauro Montalbano[1,3], Cristiana Rastellini[1], Xiaofu Wang[1], Tiziana Corsello[1,3], Mahmoud A. Eltorky[2], Renza Vento[3,4] and Luca Cicalese[1]

[1]Department of Surgery and [2]Pathology of the University of Texas Medical Branch, Galveston (USA).
[3]Laboratory of Biochemistry, Department of Biological, Chemical and Pharmaceutical Sciences and technologies, Polyclinic, University of Palermo, Palermo (Italy).

Hepatocellular carcinoma (HCC) is the most common primary liver cancer. Currently, there is limited knowledge of neoplastic transformation of hepatocytes in HCC. In clinical practice, the high rate of local recurrence of HCC suggests the presence of different hepatocyte populations within the liver and particularly in the tumor proximity. This study aims to investigate, in primary cultures of hepatocytes from liver sample fragments of patients affected by cirrhosis and HCC, their proliferation and transformation ability. Liver samples were obtained from four HCC cirrhotic patients and from one patient with a normal liver (NL). Immediately after the surgey, liver samples were employed to produce primary cultures from the HCC lesion and from the cirrhotic tissue proximal (CP: up to 2-3cm) and distal (CD: >5cm) to the neoplastic lesion. The cells were kept in culture for 26 weeks. Morphologic analyses were performed and proliferation rate of the different cell populations compared over time. Glypican-3, Heppar-1, Arginase-1 and CD-44 positivity were tested. The degree of invasiveness of cells acquiring neoplastic characteristics was studied with a trans-well migration assay. ***Conclusions:*** We observed that HCC cells in culture maintained unmodified their morphology and neoplastic characteristics. Hepatocytes isolated from CP showed a progressive morphologic transformation in HCC-like cells accompanied by acquisition of markers expression with signs of invasiveness. Most of these characteristics were not evidenced in cells obtained from CD specimens. Absence of HCC contamination in the CP isolates was confirmed. With this study, we first identify

and describe the existence of human hepatocytes near the cancerous lesion that can transform *in-vitro* in HCC. We believe that these findings provide an extremely innovative and unique approach in the method of study of this cancer offering critically important information for the development of new markers for its recognition and treatment in a stage that could even precede its clinical manifestation.

Biography

Dr. Mauro Montalbano, was born in Palermo, Italy in 1984. Dr. Montalbano is a PhD student in the Neuroscience PhD Program of University of Texas Medical Branch and University of Palermo. This is the first international PhD program between the state of Texas (USA) and the University of Palermo (Italy). Dr. Montalbano obtained his B. D. in Molecular and Cellular Biology in 2008 and Master Degree cum laude in 2012 at the University of Palermo (Italy) with a research thesis on Histone Deacelylase III Sirt1 in breast cancer cell line MDA-MB-231, investigating its subcellular localization and possible post-translation modifications. Dr. Montalbano is currently conducting his research in the transplant research laboratory at the University of Texas Medical Branch under the mentorship of Drs. Luca Cicalese, Cristiana Rastellini and Renza Vento.

Feasibility And Safety of uninterrupted peri-procedural Apixaban administration in patients undergoing radiofrequency catheter ablation for atrial fibrillation: Results From a Multicenter Study

Luigi Di Biase[*,†,‡,§], MD, PhD; Dhanujaya Lakkireddy[||], MD, Chintan Trivedi[*], MD, MPH, Thomas Deneke[¶], MD, Martin Martinek[#], MD, Sanghamitra Mohanty[*], MD, Prasant Mohanty[*], MBBS, MPH, Sameer Prakash[††,], BS, Rong Bai[*], MD, Carola Gianni[*], MD; Rodney Horton[*], MD, Shane Bailey[*], MD, Elisabeth Sigmund[#], MD, Michael Derndorfer[#], MD, Anja Schade[¶], MD; Patrick Mueller[¶], MD; Atilla Szoelloes[¶], MD; Javier Sanchez[*], MD, Amin Al-Ahmad[*], MD, Patrick Hranitzky[*], MD, G. Joseph Gallinghouse[*], MD, Richard H. Hongo[‡‡], MD, Salwa Beheiry[‡‡], RN, Helmut Pürerfellner[#], MD, J. David Burkhardt[*], MD, Andrea Natale[*,‡,‡‡,§§,***,†††], MD

Introduction: Periprocedural anticoagulation management with uninterrupted warfarin with a "therapeutic INR" represents the best approach reducing both thromboembolic and bleeding complications in the setting of catheter ablation for atrial fibrillation (AF).

Objective: The purpose of this study was to evaluate the safety and feasibility of uninterrupted apixaban administration in this setting.

Methods: We performed a prospective multicenter registry of AF patients undergoing radiofrequency catheter ablation at 4 Institutions in USA and Europe with an uninterrupted apixaban strategy. These patients were compared with an equal number of patients, matched for age, gender and type of AF, undergoing AF ablation on uninterrupted warfarin. The apixaban group comprised consecutive patients who were on twice daily 5 mg Apixaban for at least 30 days prior to ablation. The last dose of apixaban was taken the morning of the procedure. A subset of 29 patients underwent dMRI to detect silent cerebral ischemia (SCI) in the apixaban group.

Results: A total of 400 patients (200 patients in each group) were included in the study. The average age was 65.9 ± 9.9 years with 286 (71.5%) male and 334 (83.5%) patients having non paroxysmal AF. There were no differences in major (1% vs. 0.5%,p=1.0), minor (3.5% vs. 2.5%,p=0.56) and total bleeding complications (4.5% vs. 3%,p=0.43) between the apixaban and the warfarin group respectively. There were no symptomatic thromboembolic complications. All the dMRIs were negative for SCI in the apixaban group.

Conclusions: Uninterrupted apixaban administration in patients undergoing AF ablation, appears to be feasible, and effective in preventing clinical and silent thrombo-embolic events without increasing the risk of major bleedings.

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Andrea Natale, M.D.

Executive Medical Director, Texas Cardiac Arrhythmia Institute at St. David's Medical Center

Clinical Professor, Division of Cardiology, Stanford University, California

Clinical Professor of Medicine, Case Western Reserve University, Cleveland, Ohio

**Senior Clinical Director, Cardiac Electrophysiology, California Pacific Medical Center,
San Francisco, CA**

Director, Interventional Electrophysiology, Scripps Clinic, CA.

Andrea Natale, M.D., renowned for the treatment of complicated heart rhythm disorders, leads the Texas Cardiac Arrhythmia Institute at St. David's Medical Center.

A world-recognized cardiologist in the field of cardiac electrophysiology, Dr. Natale is a dedicated clinician, academician and researcher, highly sought-after from patients around the world.

Prior to the establishment of the Texas Cardiac Arrhythmia Institute at St. David's Medical Center, Dr. Natale headed the Department of Cardiac Pacing and Electrophysiology at the Cleveland Clinic from 1999 to 2008, where he also served as Medical Director for CC's Center for Atrial Fibrillation.

A committed academician, Dr. Natale has held faculty positions at Duke University and Stanford University. He has also served as an invited lecturer at more than 200 symposia and conferences around the world and is the author or co-author of hundreds of published articles on pacing and electrophysiology. Dr. Natale is the President of VeniceArrhythmias, one of the most prestigious medical conferences in Europe, as well as the executive director of EP Live, a two-day, intensive educational meeting at St. David's Medical Center targeting practicing electrophysiologists from across the globe. In addition to serving on the editorial boards of numerous medical journals, Dr. Natale is editor-in-chief of the *Journal of Atrial Fibrillation*. He has also been among the Best Doctors in America since 2003. In May 2014, he was again nominated TOP DOCTOR in America

He has pioneered new technologies, including a circumferential ultrasound vein-ablation system to correct atrial fibrillation: he performed the procedure on the world's first five patients. Dr. Natale also developed some of the current catheter-based cures for atrial fibrillation, and he was the first electrophysiologist in the nation to perform percutaneous epicardial radiofrequency ablation, which is a treatment for people who fail conventional ablation. He also holds a patent for a device used to treat atrial fibrillation.

Always on the forefront of modern research, Dr. Natale focuses on innovative advances in the treatment of atrial fibrillation. His goal is to benefit patient care through new technologies such as robotic devices and specialized ablation catheters.

Education

M.D., University of Firenze Medical School, Firenze, Italy

Cardiology, Catholic University, School of Cardiology, Rome, Italy

Cardiology and Cardiac Electrophysiology, University of Western Ontario, London, Canada,

Cardiac Electrophysiology, University of Wisconsin, Sinai Samaritan Medical Center, Milwaukee, WI

Board Certification

American Board of Internal Medicine (Internal Medicine, Cardiovascular Disease and Clinical Cardiac Electrophysiology)

Recognition

2004-2005-2006	Bakken Heart-Brain Research Award, Cleveland Clinic
	Innovator of the Year, Cleveland Clinic.
2011	Elected to the Heart Rhythm Society Board of Trustees
2003 - present	Nominated among The "Best Doctors" in America
2009	Texas Cardiac Arrhythmia Institute received The Bury + Partners Innovation Award, Austin, Texas
2012	Awarded the Frist Humanitarian Award. March 6, 2012.

Software as a Service (SaaS)

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Abstract

Software as a Service (SaaS) is a software delivery model in which software and associated data are centrally hosted in the cloud. SaaS is typically accessed via a web browser. Payment for the service is through a subscription model.

You are using SaaS every day if you access applications like Facebook, Twitter, or gmail.

Why are Customers buying SaaS?

- Customers who want to quickly gain access to new capabilities that they cannot obtain by purchasing existing software products and services.
- Customers that want to shift from Capital Expenses (On-premise) to Operating Expenses (SaaS) to fund software purchases.
- Customers that wish to replace existing licensed and/or client/server applications with SaaS applications.

What is driving the move to SaaS?

- Market dynamics and disruptive technologies are driving the shift to SaaS consumption models.

- Developers want low touch, easy to consume, continuously updated software.
- Lines of Business want access from anywhere, to create new offerings by composing services from multiple providers.
- IT Operations want to manage on-premise, cloud, and *hybrid* environments.

How can SaaS help?

- Improved total-cost-of-ownership due to lower infrastructure cost.
- Pay for what you use via a subscription model.
- Minimal upfront investment.
- Continuous delivery of new capabilities allows rapid innovation and access to immediate code fixes.
- Lower risk with try & buy approach.
- Accelerated evaluations and decision making.

Biography

Paolo Papi was born in Rome, Italy. After obtaining the Master Degree in Electronic Engineering at "La Sapienza" Rome University and completing the military service as Officer in the Italian Navy, he joined IBM in 1991. He started his career as software developer, to evolve in a few years into technical leadership roles. In 1998 moved from Rome to Austin, TX, assuming managerial/leadership responsibilities in different organizations and roles in the IBM Software Group. Paolo lives in Austin, Texas, is married with Patrizia and has a 8 years old son, Piefrancesco William.

Luca Parmitano

Personal data

Born in Paternò (although he considers Catania to be his hometown), Italy, on 27 September 1976 Luca Parmitano is married with two daughters. He enjoys scuba diving, snowboarding, skydiving, weight training and swimming. Other interests include reading and music.

Education

Luca graduated from the Liceo Scientifico Statale 'Galileo Galilei' in Catania, Italy, in 1995.

In 1999, he completed a bachelor's degree in political sciences at the University of Naples Federico II, Italy, with a thesis on international law. In 2000, he graduated from the Italian Air Force Academy, in Pozzuoli, Italy.

Luca completed basic air force training with the US Air Force at the Euro-NATO Joint Jet Pilot Training in Sheppard Air Force Base, Texas, US, in 2001. He completed the JCO/CAS course with the USAFE in Sembach, Germany, in 2002.

In 2003, he qualified as Electronic Warfare Officer at the ReSTOGE in Pratica di Mare, Italy. He completed the Tactical Leadership Programme in Florennes, Belgium, in 2005.

In July 2009, Luca completed a master's degree in experimental flight test engineering at the Institute Superieure de l'Aeronautique et de l'Espace in Toulouse, France.

Special honours

Awarded a Silver Medal to the Aeronautical Valour by the President of the Italian Republic in 2007.

Experience

Following completion of undergraduate pilot training in 2001, Luca flew the AM-X aircraft with the 13th Group, 32nd Wing in Amendola, Italy, from 2001 to 2007. During that time, he obtained all aircraft qualifications, including Combat Ready, Four Ship Leader and Mission Commander/Package Leader.

Within the 13th Group he served as Chief of Training Section and Commander of the 76th Squadron. He was also the 32nd Wing Electronic Warfare Officer.

In 2007, he was selected by the Italian Air Force to become a test pilot. He trained as an Experimental Test Pilot at EPNER, the French test pilot school in Istres.

Luca is a major in the Italian Air Force. He has logged more than 2000 hours flying time, is qualified on more than 20 types of military airplanes and helicopters, and has flown over 40 types of aircraft.

Luca was selected as an ESA astronaut in May 2009.

In February 2011, Luca was assigned as a flight engineer to Italian space agency ASI's first long-duration mission on the International Space Station. He was launched on a Soyuz launcher from Baikonur, Kazakhstan on 28 May 2013.

Luca spent 166 days in space conducting over 20 experiments and took part in two spacewalks and the docking of four spacecraft for his Volare mission. He landed safely back on Earth on 11 November 2013.

Reactivating RBL2/p130 oncosuppressive function as a new possible therapeutic strategy for pleural mesothelioma

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[2]Department of Medicine, Surgery and Neuroscience, University of Siena and Istituto Toscana Tumori (ITT), Siena, Italy
[3]Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, College of Science and Technology, Temple University, Philadelphia PA, USA
[4] Division of Thoracic Surgery, Department of Thoracic Surgical and Medical Oncology; Istituto Nazionale Per Lo Studio E La Cura Dei Tumori "Fondazione Giovanni Pascale"; IRCCS; Naples, Italy

Background | Deregulation of cell cycle control is the leading cause of cancer. Key proteins restraining cell cycle progression are the retinoblastoma (Rb) family members, including RB1/p105, RBL1/p107 and RBL2/p130. Although Rb inactivation is a hallmark of most cancers in mesothelioma Rb is mainly affected by alterations in its pathway. We recently identified, through computational chemistry and molecular modeling studies, a small molecule able to act as a specific inhibitor of the CDK2-CycA complex and to reactivate the tumor suppressive function of RBL2/p130 in cancer.
Methods | We analyzed by MTS assay the cytotoxic effect of our compound on a panel of lung cancer and pleural mesothelioma cell lines and determined its IC50 values. We evaluated its effects on cell cycle and apoptosis by FACS and dissected its molecular mechanism of action by Western blot.
Results | We found that our compound effectively inhibited proliferation of lung cancer and mesothelioma cell lines by specifically inhibiting CDK2-CycA activity towards RBL2/p130. The decrease in RBL2/p130 phosphorylation led to stabilization of its complex with the E2F4 transcriptional factor and consequent repression of their targets necessary for cell cycle progression, including CDK2 itself. Consistently, our compound arrested cell cycle and triggered apoptosis. Interestingly, apoptosis seemed to be mediated by RBL2/p130 itself because it was repressed in RBL2/p130-silenced cells.
Conclusions | Overall our findings indicate that the pharmacological reactivation of RBL2/p130 induces its cell-cycle restraining and pro-apoptotic functions, the latter being still largely unexplored, and identify a new possible therapeutic strategy for mesothelioma treatment.

S.H.R.O.
SBARRO HEALTH RESEARCH ORGANIZATION

Antonio Giordano

Growing up in Naples, Italy, his father was an oncologist and a pathologist at the National Cancer Institute of Naples and was also a professor at the University of Naples, Giovan Giacomo Giordano, thus Antonio Giordano decided to branch out and start a research career in genetics applied to pathology. He had his father as his mentor, and he was ready to invest his time into science.[1] Early on, while following his father's research, he became very interested in the link between the environment and the effect of toxic waste with the increasing cancer rates in the Campania region in Italy.[2] Giordano had finished his studies at school, and he had received his degrees by 1990. He earned his medical degree at the University of Naples in 1986, and he earned his doctorate at the University of Trieste in 1990.[3] He began to work at Cold Spring Harbor Laboratory in 1988, whose director was Nobel Prize winner James Dewey Watson, "the father of genetics", best known for his co-discovery on the structure of DNA (deoxyribonucleic acid). While Giordano was working at Cold Spring Harbor Laboratory on Long Island, New York; he worked in a program at the lab that dealt with the cell-division cycle. Giordano worked with a team and would later identify a protein that works as an important part in the cell cycle of cancer.[1]

Sbarro Health Research Organization

Giordano wanted to bring Italian scientists to the United States. He has said that in Italy there is little funding, but brilliant minds. In the United States, there is more freedom to do research of your choice, and there are more opportunities to receive funding.[1] Antonio Giordano met Mario Sbarro, the president of Sbarro, Inc., an international restaurant chain, while working at Cold Spring Harbor Labs.[5] Giordano desired to be a part of research, but he knew it was very challenging for a young researcher to receive the funds and opportunities to do so.[1] Sbarro donated one million dollars to start the Sbarro Institute in 1993,[6] which was first established at Thomas Jefferson University in Philadelphia. After he had joined as an alliance with the university in 2002, Giordano moved his team to Temple University, which is also in Philadelphia. The Sbarro Institute was renamed Sbarro Health Research Organization (S.H.R.O.). Sbarro Health Research Organization has a solid commitment in the mentoring of young researchers.[7] S.H.R.O. places their dedication into finding cures for cancer and cardiovascular diseases. They strive to do this by identifying the underlying molecular mechanisms of the diseases. The new center includes the Sbarro Institute for Cancer Research and Molecular Medicine.[2]

Research and discoveries

Among some of his research throughout the years, Giordano identified a tumor suppressor gene, Rb2/p130. This gene can be used to restrain the size of tumors so that they do not grow larger. This gene has been found to be active in lung, endometrial, brain, breast, liver and ovarian cancers. Giordano also identified that if doses of gamma radiation are combined with this gene, then the ability of tumor cells to die can speed up.[6] Giordano went on to discover a few others: Cyclin A, Cdk9, and Cdk10. Cdk9 is known to play critical roles in HIV transcriptions, inception of tumors, and cell differentiation.[3] These three genes have also been linked to play critical roles in various genetic muscular disorders. They also play a part in muscle differentiation.[10] Giordano also developed patented technologies for diagnosing cancer. He unfolded a therapeutic program for the treatment of cancer.[1] Giordano has published over 400 papers on his work and findings. They are written on the fields of gene therapy, cell cycle, the genetics of cancer, and epidemiology.[7] In 2011, Antonio Giordano and his team uncovered anti-tumor agents that may be effective in the treatment of mesothelioma. This is a rare cancer caused by prolonged asbestos exposure. It affects the lining of the lungs, heart, and chest areas. Giordano and his team discovered that they could induce cell death without harming healthy cells.[11] Antonio Giordano teamed up with Melissa Napolitano, PhD, and Giuseppe Russo, PhD, to research if watching a computer animated avatar could assist women to shed unwanted pounds. The rationale of this study was to see if an avatar could educate women on healthier behaviors when it comes to weight loss. More than 100 overweight women were observed. Video games were designed showing women shopping for healthier groceries, selecting smaller portion sizes, and exercising on a treadmill. Each video lasted fifteen minutes. Results revealed that after four weeks, the average weight loss was approximately four pounds. This could be a potential instrument in the aid of weight loss among both men and women in the long term.[12]

Trouble in Campania

Antonio Giordano analyzed the environmental relations among toxic dumping and cancer growth for over fifteen years in Campania, Italy. The Camorra-Mafia was illegally disposing of their toxic waste, and politicians were covering it up for years. The Camorra Mafia was receiving money for dumping their heavy metals and compounds which were known to cause cancer. The toxic waste was lit on fire and would burn in fields and waste ground. This area was known as the Triangle of Death. In some areas, research

revealed that there was a twelve percent increase in cancer rates. Rates also increased in the number of birth defects by more than eighty percent. These defects harmed the central nervous systems.[5] The president of Italy, Giorgio Napolitano, sent a letter to Giordano after these sightings were uncovered. He thanked Giordano for his commitment to finding out the hazards of the pollutions in Campania.[13]

Current work

Antonio Giordano currently upholds his position as the president of Sbarro Health Research Organization and serves as the director of the Sbarro Institute for Cancer Research and Molecular Medicine at Temple University in Philadelphia, Pennsylvania. He continues to devise advanced theories and brainstorm new ones. Giordano has been studying the connections between obesity and cancer. He, additionally, works on programs in molecular therapeutics.[7] Giordano serves on the editorial board of review for around twenty scientific journals.

"Not everybody appreciates your work and what you do, but I am persistent, and I move forward because I want to help people".

Antonio Giordano

Microemulsions rule the world by Gianna Pietrangeli and Antonio Cardenas, Baker Hughes Inc.

In recent years, applications of microemulsion have increased over all disciplines. The industry is starting to realize about the potential of these special fluids. Microemulsions are playing a main roll in all the sectors, from food, passing through pharmaceutical, to oil & Gas industry.

A microemulsion is a thermodynamically stable and translucent solution commonly integrated by two immiscible liquids with a surface activity agent, who makes possible this phenomenon. Due to their unique properties such as high oil solubilization, low interfacial tension, large interfacial area, the applications have been increasing.

Investigations, publications, and patents surrounding this fluid have been growing in the past years and the applications have become broader as the know-how grew and the fluids became more robust. The main goal in many industries is to formulate a fluid capable of resisting changes in temperature, density, and salinity. Therefore, they are carefully designed and customized depending on the application.

A more approachable concept about microemulsions is presented in this paper. This paper aims to review the most common properties of microemulsion systems and the different applications. Furthermore, the paper will expose the science behind the art.

Biography:

Gianna Pietrangeli is a Chemical Engineer working at Baker Hughes Inc. as a R&D scientist with eight years of experience in Research and Development (R&D) projects, including drill-in fluids, drilling fluids, and completion fluids. She has been mainly involved in the formulation of microemulsions for wellbore completion, remediation, and restoration applications for the Oil and Gas upstream sector. On her early days she developed micro- and nano- emulsions for cosmetic applications. She holds several publications and has presented in important oil conference around the world. She holds dual citizenship, Italian and Venezuelan, and resides in the USA since 2010.

Antonio Cardenas is a Chemical Engineer, PhD in Chem. Eng and Master in General Management working for Baker Hughes as a Senior Project Manager with more than 25 years of experience in Research and Development (R&D), and Business Development projects including technical bids, Enhanced Oil Recovery; microemulsions and emulsions applications in the Oil, Gas and Energy sector. He worked previously for Petroleos de Venezuela and participated in the development of OrimulsionÒ, implemented technical solutions to users of this fuel including ENEL Italia: Porto Tolle (Veneto), Fiume Santo (Sardinia), Brindisi Sud (Salento) and organized knowledge events for international clients in Venezia and Caracas. He has participated in several technical and innovation related conferences including Invention Machine 4th Annual

European user group meeting, Bergamo, September, 2000 and Bubbles & Drops, Empoli, May, 1995. Because of his interest in the Italian culture he has studied the Italian language: Diploma Istituto Italiano di Cultura Caracas 1999-2001: Scuola Leonardo, Roma, summer 2001: Istituto Italiano di Cultura, Houston 2010. He is citizen of Venezuela, and

Traumatic life events and negative pathological memories can be erased using ganaxolone

Graziano Pinna, PhD

The Psychiatric Institute, Department of Psychiatry, College of Medicine, University of Illinois at Chicago, 1601 W. Taylor Street, Chicago, IL 60612.

Traumatic life events involving the threat of injury or death, such as combat exposure, sexual assault, witnessing of terroristic attacks, or involvement in natural disasters may lead to post-traumatic stress disorder (PTSD). PTSD symptoms appear following the traumatic event and fail to extinguish or may worsen over time. PTSD symptoms include intrusive memories, flashbacks and nightmares, emotional reactions to trauma reminders, difficulty sleeping, irritability and aggression, strong negative emotions, emotional numbing and avoidance of reminders of the event. An estimated 7–8% of population will experience PTSD in their lives and PTSD prevalence is higher among abused children (50%) and soldiers (20-30%, 1 every 5 in return from Iraq). Notwithstanding the prevalence of this debilitating psychiatric disorder in the general population, there are is specific FDA-approved treatment. The search for neurobiological biomarkers for PTSD is therefore a current focus of investigation in the hope that a better understanding of individually variable neurobiological risk factors for PTSD will spur development of more specific and individually effective therapies. Levels of neurosteroids that modulate $GABA_A$ receptors (a target for anxiolytic drugs) have been found to be low in PTSD patients and this decrease is associated with severity of symptoms. We recently have established a mouse models that express PTSD-like behavioral symptoms associated with decreased neurosteroid levels. The present translational study was undertaken to evaluate the therapeutic properties of a neurosteroid analog, ganaxolone has the capacity to improve anxiety and PTSD-like behaviors manifested by the mouse model of PTSD, including increased aggression and exaggerated fear responses. Consistent with our hypothesis, ganaxolone induced a dose-dependent reduction in aggression and anxiety-like behavior. Ganaxolone also normalized exaggerated contextual fear and, remarkably, enhanced fear extinction retention. Based on our results, ganaxolone is currently being investigated for the treatment of refractory epilepsy and PTSD in human clinical trials.

Original paper published in Frontiers in Cellular Neuroscience:
http://journal.frontiersin.org/Journal/10.3389/fncel.2014.00256/full

Ansa Media Release:

https://www.ansa.it/saluteebenessere/notizie/pro/rubriche/diagnosiecure/2014/09/10/italiano-scopre-potenziale-farmaco-cancella-brutti-ricordi_b0804c66-5a58-4302-972a-0eed27ddeb7f.html

http://www.meteoweb.eu/2014/09/ricerca-scoperto-farmaco-cancella-i-brutti-ricordi/322208/

Cristiana Rastellini, M.D.

Professor of Surgery, Medicine and Microbiology & Immunology; Director of Cellular Transplantation and Transplant Research Medical School: University of Rome "La Sapienza", Rome, Italy Fellowship Program: Cell Transplant Research Fellowship, T.E. Starzl Transplantation Institute, University of Pittsburgh, Pittsburgh, Pennsylvania Special Interests: Organ transplantation; immunomodulationimmunosuppression; tolerance induction; cell transplantation; beta cell proliferation; diabetes Research Projects: Organ/cellular preservation; mechanisms of acute and chronic rejection; tolerance induction; pancreatic islet transplantation; beta cell proliferation

Luca Cicalese, MD

Dr. Luca Cicalese was born in Rome, Italy, and graduated from the University of Rome "La Sapienza" where he also trained in General Surgery and received his board certification. Then, he completed his fellowship in transplantation surgery at the T.E. Starzle Transplant Institute at the University of Pittsburgh. There he distinguished himself for his high merit, publishing numerous scientific articles and obtaining grants and awards from the most prestigious Societies. For this work, he was given a faculty appointment as Instructor of Surgery, which he held up to 1998. Dr. Cicalese was later recruited at The University of Texas Medical Branch (UTMB), where he holds the titles of Tenured Professor of Surgery, John Sealy Distinguished Chair of Transplant Surgery, Director of the Texas Transplant Center and Director of Hepatobiliary Surgery. Since his arrival at UTMB, Dr. Cicalese has established a new liver transplant program and established a successful hepatobiliary service. He has reorganized the multiorgan transplant center, improving the clinical outcome of all abdominal transplants that now are above national average. He also directed the establishment of one of the few clinical islet transplant centers in the U.S.

Dr. Claudia Ratti

Biography.

Dr. Claudia Ratti received her Ph.D. in Theoretical Physics at the University of Torino (Italy) in 2003. She has been a post-doctoral researcher at the Technical University of Munich (Germany), ECT* in Trento (Italy), State University of New York at Stony Brook (USA) and Wuppertal University (Germany). In 2010 she became junior professor and group leader at Torino University, thanks to a FIRB grant funded by the Italian Ministry of Education, University and Research. She recently became a professor at the Physics Department of the University of Houston. Author of more than forty publication in peer-reviewed international journals, she presented the results of her research in more than eighty seminars at international conferences and universities. Thanks to her achievements she has been awarded the 2011 International Zonta prize for women in science and the 2012 prize "Giuseppe Borgia" for best Italian Physicist below 35, granted by the Italian Academy of Science (Accademia Nazionale dei Lincei). Her research is mainly focused on the study of strongly interacting matter under extreme conditions of temperature and density, such as the one created at the Large Hadron Collider (LHC) at CERN.

Abstract.

The research activity of Dr. Ratti is devoted to understand the properties of Quark-Gluon Plasma (QGP) by calculating fundamental observables from first principles and systematically relating them, for the first time, to experimental measurements. Ordinary hadronic matter undergoes a phase transition to the QGP under extreme conditions of temperature or density. In the Universe, the reverse transition took place just a few microseconds after the Big Bang: the basic building blocks of nature, the hadrons, were formed at this time. Today, these conditions can be recreated in the laboratory, in ongoing Heavy-Ion Collisions (HICs) at RHIC and the LHC. On the theoretical side, the fundamental theory of strong interactions (QCD) can finally be solved under the same conditions, by numerically simulating the interactions between quarks and gluons on a discretized grid (lattice). Such simulations are running on the most powerful supercomputers in the world and allow a precise determination of the QGP properties from first principles. Dr. Ratti has been working on strongly interacting matter under extreme conditions and on Quark-Gluon Plasma physics throughout her career and gave several fundamental contributions to the field. She published the precise value of the temperature at which the phase transition to the QGP occurs, as well as the equation of state of the strongly interacting medium created in heavy-ion collisions. More recently, she was able to relate the evolution of the experimental system to the QCD phase diagram obtained from first principles, by comparing experimental measurements for

fluctuations of conserved charges to the results of her high-precision lattice QCD simulations. This work constitutes the first step towards a description of Quark-Gluon Plasma in terms of the fundamental theory of strong interactions.

Biographical Data

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National Aeronautics and Space Administration

MARIO RUNCO, JR.
EARTH AND PLANETARY SCIENTIST
HUMAN EXPLORATION SCIENCE
ASTROMATERIALS RESEARCH AND EXPLORATION SCIENCE &
HABITBILITY AND HUMAN FACTORS
SPACE AND LIFE SCIENCES

EDUCATION: Bachelor of science degree in Earth and Planetary Science from the City College of New York in 1974, master of science degree in Atmospheric Phyics from Rutgers University, New Brunswick, New Jersey, in 1976, and an honorary doctor of science degree from the City College of New York in 1999.

SPECIAL HONORS: Awarded the Defense Superior Service, Defense Meritorious Service, NASA Exceptional Service, Navy Achievement and Navy Pistol Expert Medals. Also awarded three NASA Space Flight Medals (STS-44, STS-54 and STS-77), two Navy Sea Service Deployment Ribbons (USS NASSAU and USNS CHAUVENET), and the Navy Battle Efficiency Ribbon (USS NASSAU). Mario was also the recipient of the City College of New York's Townsend Harris Medal (1993), and the Cardinal Hayes High School John Cardinal Spellman Award (1993). As an undergraduate, he received the City College of New York Class of 1938 Athletic Service Award.

EXPERIENCE: After graduating from Rutgers University, Mario worked for a year as a research hydrologist conducting ground water surveys for the U.S. Geological Survey on Long Island, New York. In 1977, he joined the New Jersey State Police and, after completing training at the New Jersey State Police Academy, he worked as a New Jersey State Trooper until he entered the Navy in June 1978. Upon completion of Navy Officer Candidate School in Newport, Rhode Island, in September 1978, he was commissioned and assigned to the Naval Research Lab in Monterey, California, as a research meteorologist. From April 1981 to December 1983, he served as the Meteorological Officer aboard the Amphibious Assault Ship USS NASSAU (LHA-4). It was during this tour of duty that he earned his designation as a Naval Surface Warfare Officer Officer. From January 1984 to December 1985, he worked as a laboratory instructor at the Naval Postgraduate School in Monterey, California. From December 1985 to December 1986, he served as Commanding Officer of Oceanographic Unit 4 and the Naval Survey Vessel USNS CHAUVENET (T-AGS 29), conducting hydrographic and oceanographic surveys of the Java Sea and Indian Ocean. After serving as Fleet Environmental Services Officer, Pearl Harbor, Hawaii; Mario joined NASA in 1987 and remained on active duty as a NASA astronaut until 1994.

NASA EXPERIENCE: A veteran of three space flights (STS-44 in 1991, STS-54 in 1993, and STS-77 in 1996), Mario has logged over 551 hours in space which includes a 4.5 hour spacewalk during his STS-54 mission. His technical assignments to date include having served in Operations Development, where he assisted in the design, development and testing of the Space Shuttle crew escape system; in Mission Support, at the Software Avionics Integration Laboratory (SAIL), where he performed test and evaluation of Space Shuttle mission-specific flight software; at the Kennedy Space Center, as Astronaut Support, where he assisted in preparing Space Shuttle missions for launch, and in the Mission Control Center as a Capsule (Spacecraft) Communicator (CAPCOM). Mario currently serves as an Earth and Planetary Scientist and as the Lead for Spacecraft Window Optics and Utilization for the International Space Station's U.S. Laboratory Destiny Module Scince window and the Window Obeservational Research Facility, both of which he helped design.

SELECTED PUBLICATION: M. Runco, D. Eppler, K.P. Scott , S. Runco; "Earth Science and Remote Sensing from the International Space Station utilizing the Destiny Laboratory's Science Window and the Window Observational Research Facility." In Proceedings of the 30th International Symposium on Remote Sensing of Environment, Honolulu, Hawaii, 2003.

Dec 02, 2014

Susan K. Runco

Susan Runco is currently the Science Operations Co-PI for the ISS High Definition Earth Viewing Experiment on the ISS and an ISS Crew Earth Observations Payload Principle Investigator (PI). She was also the PI for Earth Science Toward Exploration Research (ESTER) during Expedition 7 in 2003 to determine the capability of a higher focal length lens on a mounted Kodac still camera in the high-quality window in the ISS U.S. Laboratory. Between 1988 and 1993, as Officer in Charge of the Naval Polar Oceanography Center Component, Texas, and Ocean Science Advisor at Johnson Space Center, she served on the project team to develop a geolocation device for a hand-held electronic still camera and planned/conducted Earth Observations Astronaut training; She also served as the Operations Officer of the Naval Survey Vessel USNS Chauvenet (T-AGS 29), where she planned and conducted hydrographic and oceanographic surveys of the Makassar Strait, Indonesia in 1980/1981.

She received a Masters of Science (Meteorology and Oceanography) degree from the Naval Postgraduate School, Monterey, CA in 1986 with the Masters Thesis titled "Obtaining Optical Depth from AVHRR Data off Southern California", June 1986. Her Bachelors of Science degree in Biological/Chemical Oceanography was obtained from Florida Institute of Technology in June 1976

Overall, her education and experience through the U.S. Navy and NASA has built her knowledge in applying remotely sensed imagery to meteorology and oceanography operations, developing and testing imaging sensors from space platforms, and working with teams in the planning, integration, and execution of processes necessary to achieve the science and technical objectives in space.

Here is a photo if you wanted one but you don't have to use it. Also if you want to make my bio shorter you can delete the last paragraph.

The Biophysics @ Palermo: from neurodegenerative diseases to food technology.

Pier L. San Biagio

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After a brief introduction to the development of Biophysics in Italy, I will present the main today's research activities at the Biophysics Institute of the National Research Council in Palermo. They all are based on the study of different types of biomolecular aggregation that occur on a scale of lengths intermediate between that macro and the microscopic. I will discuss how the kinetic competition between the different processes concurring to aggregation of biomolecules can lead to a significant variety of supramolecular structures more or less ordered. The effect of different factors capable of controlling the aggregation such as changes in molecular conformation, solvent's properties or the presence of ions in solution will be considered.

The interest of these studies covers different fields of science, ranging from food technology (new additives to control the consistency of the food) to the pharmaceutical industry (biopolymers suitable for transport targeted drug), from microelectronics (DNA chip and new biopolymer materials suitable for the construction of optical memories) to medicine (aggregation processes of proteins with toxic effects as in the case of some neurodegenerative diseases: Alzheimer's disease, BSE, etc.).

Pier Luigi San Biagio has coordinated the research activity in the field of Biophysics at the CNR Institute for Interdisciplinary Applications of Physics (IAIF) since its creation in 1980. After one year spent working at NIH (Bethesda, MD, USA), he returned in Italy and set up a lab with outstanding equipment for the characterization of biomolecular aggregation. He was Director of the Institute from 1998 to 2002 when the Institute became part of the Biophysics Institute as Palermo U.O.S. From 1998 to 2002 he helped to establish the scientific and administrative actions for the creation of the new Institute of Biophysics resulting from the merging of five research structures of CNR. Since then, he is the head of U.O.S. and Director of the Palermo Research Group. He is also scientific responsible of many national and European projects and member of the Board of Tutors of the International PhD Course in Biomedicine and Neuroscience, in cooperation between Palermo, Italy, and Galveston, Texas.

The research activity is based on complementary approaches to the study of biomolecular aggregation at microscopic and mesoscopic level by the use of Molecular Dynamics simulations and experimental techniques exploring different length scale. In particular the research activity covers the following subjects: sol-sol-gel phase transition in proteins and biopolymer solutions; static and dynamic properties of polymers, polyelectrolytes, micro emulsions and colloids; dynamics in crowded macromolecular solutions; glass transition; structure of amyloid fibrils and the mechanism of their formation using biophysical methods; protein folding; characterization of micro-nano particles for controlled drug delivery. The activity is proved by more than 100 published articles on ISI journal and books, 2 edited books and more than 250 abstracts presented at national and international meetings.

Sphere-copter: a spherical Hybrid Autonomous Vehicle system for indoor commercial and industrial applications

Giuseppe Santangelo

Skypersonic, LLC

Artistic view of Sphere-copter

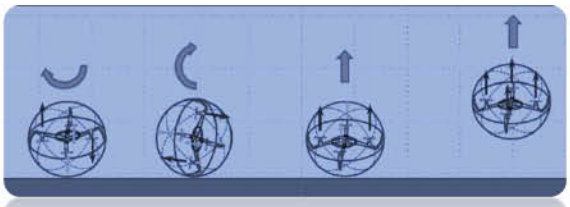
The present work relates generally to unmanned vehicles capable of flight. Such vehicles are commonly referred to as unmanned aerial vehicles ("UAVs"), or less formally as "drones". Drones were originally developed to be used by the military in the context of special operations. The technology has spread to civilian applications such as policing, firefighting, and security. Many are predicting that the developed world is on the cusp of a dramatic revolution in the use of drones for non-governmental use.

Skypersonic team at Lawrence Tech University and some different prototypes of sphere-copter

The original concept is represented by an enclosed UAV system, named sphere-copter, composed by an autonomous multi-copter system assembly that is located within a spherical enclosure component. The enclosure component protects the vehicle assembly from being damaged by the environment of the apparatus. The enclosure component can also protect the persons and property in the environment of the apparatus from being damaged by the vehicle assembly.

The original concept in this UAV is that the enclosure component enable the apparatus to operate in a rolling mode in addition to a flight mode, that allows the sphere-copter to operate in narrow scenarios as, for example, the inspection inside an industrial pipeline.

The rolling mode function needed a special original control software based on a study of the "aerodynamic rolling". That study has been conducted by both experimental and CFD approaches.



Sphere-copter rolling – flying transition

In addition, the Sphere-copter is able to move autonomously in a defined scenario. The sphere-copter's "intelligence" is the result of an expert system that uses an artificial intelligent perceptive-map system coupled with an original Short-range Indoor Positioning System (SIPS).

Giuseppe Santangelo BIO (2014)

In 2013 he founded Skypersonic™ a US company focused on the Aerospace Research and Unmanned Aerial Vehicles technology development. Skypersonic is developing original mini-UAV products for civil use, in particular for industrial, agriculture and indoor commercial applications.

Giuseppe is the president of Leonardo International Inc. He conceived the idea to found a scientific non-profit organization, Leonardo International, for the international promotion of the Italian science and technology culture. This organization is currently assisting some Italian SME in their US incorporation and initial operations. Leonardo sponsors exhibitions and events that focus on promoting the Italian science and technology (www.leonardointernational.org).

Giuseppe collaborates at Lawrence Technological University in Detroit as adjunct professor of Space System Engineering, Aerospace Propulsion and Mechanical Vibration. He will teach at Wayne State University Autonomous Vehicles course from 2015.

Giuseppe has been a professor of Attitude Orbital Guidance and Navigation Control at the International Master II level in Space Exploration and Development Systems (SEED: http://www.seeds-master.eu/) at Polytechnic of Turin, Universität Bremen (Germany) and Grande Ecole Aérospatiale Supaero Toulouse (France).
He was Professor of "Energetic and Mechanics" at the Engineering Faculty of The University of Catania for the Electrical Engineering Bachelor Degree.

He has spent several years working in the Aerospace and Automotive industries. He was responsible for the development of several space research projects on behalf of the European Space Agency at Thales Alenia Space in Italy and for the development of automotive industry emerging technologies in the powertrain and infotainment

sectors for some OEM international engineering players. He has been CEO of the Teoresi Group, an international engineering group headquartered in Turin Italy ,focused on model based methodologies for the automotive and aerospace markets. Since 2010, he founded and directed the US branch of the group. He has been President & CEO of Teoresi Inc based in Troy, Michigan and Chicago, Illinois.

Formation

Giuseppe achieved his master degree in mechanical engineering with full marks at the University of Catania in 1996. He has been researcher at the industrial department of the engineering faculty in Catania University for few years. He studied Astronautical Engineering at La Sapienza di Roma, he published 15+ papers on international journals and congresses on the Aerospace system design and Mechanical control engineering. Giuseppe participated to the engineering design and development of several equipment for the International Space Station. He received three awards from the National Aeronautics and Space Administration (NASA) for the "outstanding leadership and contribution" of the International Space Station modules design reviews.

Using Multistage Nanovectors (MSVs) to deliver Sulindac and Silymarin loaded in Micelles for the prevention of colon cancer: in vitro studies.

Maria Principia Scavo PhD, Emanuela Gentile PhD, Ennio Tasciotti PhD.

Methodist Research Institute, Houston (Texas)

Familial adenomatous polyposis (FAP) is an inherited disorder characterized by cancer of the large intestine (colon) and rectum. Mutations in the APC gene cause both classic and attenuated familial adenomatous polyposis. Current therapies rely on Sulindac that can delay the onset of polyps, but has been associated with cardiovascular side effects after long time exposure to the drug. In 2010 a different phytoestrogen, silymarin, was found to stimulate the expression of estrogen receptor beta in the colon cancer, therefore reducing the risk of polyps formation in FAP patients undergoing colectomy. For this purpose, we used Multistage nanovectors (MSVs) to carry on a minimum amount of drug directly on the surface of the cells, binding the MSVs with a cocktail of antibody anti Meprin (against for subunit alpha and subunit beta respectively) which recognize a specific proteins on the intestine extracellular matrix of intestinal mucosa. In this work we optimized the encapsulation of the drugs in MSVs and demonstrated in vitro the selective toxicity of Sulindac and Silymarin on a tumor cell line vs normal intestinal epithelial cells. Our future goal, is to administer the MSV in vivo in the digestive tract to eliminate the side effects by reducing the amount of drug, thus allowing a long-term prevention of colectomy in the patients.

Scavo Maria Principia Bibliography:

Dr. Scavo earned her M.S. Biology at University of Rome "La Sapienza", Italy and a Ph.D. in Biochemicals Medicine at University of Bari 2005. Her research focused on Colon Cancer and Liver Cancer, in particular the diet implication on the prevention of this tumor, and involvement of Cancer Stem Cells on development of this pathology. During the 9 years of post doctorate, she carried her research in the area of molecular imaging, for studies the estrogen receptor expression in pathological and normal tissue in vitro and in vivo, and Characterization of Cancer stem cells. She moved to the United States in 2013 as a Research Associate in the Methodist Research Institute, Department of Nanomedicine. There, Dr. Scavo expanded her research to material science and

nanotechnology and to their applications in the colon cancer prevention, mediated drug delivery using Multistage Delivery Nanoparticles.

THE ROLE OF ITALY IN PLANETARY REMOTE SENSING

Francesca Scipioni, Ph.D., currently a post-doc fellow at the Lunar and Planetary Institute (LPI) in Houston. Past position: post-doc fellow at INAF-IAPS, Rome, to work on Cassini/VIMS data. Ph.D. In Astronomy achieved in December 2012 at the University of Rome "Tor Vergata", with a thesis on "Spectroscopic identification and classification of terrain units on Dione's and Rhea's surfaces based on Cassini/VIMS data."

Italian researchers occupy a leader position in the Solar System exploration. The major contribution is in the development of imaging spectrometers and radar sounders for ongoing and future planetary missions. The team located at the INAF-IAPS institute in Rome, in particular, contributed to the development of several planetary imaging spectrometers:

1. VIMS onboard the NASA-ESA-ASI Cassini mission to Saturn and its satellites (orbiting Saturn since 2004);
2. PFS and OMEGA aboard the ESA Mars Express mission (orbiting Mars since 2003);
3. VIRTIS onboard the ESA Rosetta mission, currently at comet 67P/Churyumov-Gerasimenko;
4. VIR onboard the NASA Dawn mission, which orbited the asteroid Vesta in 2011-12 and will enter orbit around the dwarf planet Ceres in 2015;
5. JIRAM onboard the NASA Juno mission, due to enter orbit around Jupiter in 2016;
6. VIHI onboard the ESA BepiColombo mission to explore the planet Mercury;
7. MAJIS for the future ESA JUICE mission to explore the icy Galilean satellites.

Notable planetary radars provided by the Italian Space Agency (ASI) are:

1. RADAR for the NASA-ESA-ASI Cassini mission;
2. MARSIS for the ESA Mars Express mission;
3. SHARAD for the NASA Mars Reconnaissance Orbiter's mission;
4. RIME for the future ESA JUICE mission.

Working in the Rome's team during my Ph.D., I got acquainted with the spectroscopic analysis of airless planetary bodies. My Ph.D. research was devoted to the analysis of data returned by the VIMS instrument onboard Cassini of the two icy satellites Dione and Rhea. I carried out a multivariate classification of their surface based on infrared spectroscopy data to understand how many homogeneous terrain types exist, and how do they distribute. Saturn's moons are primarily composed by water ice and the variations observed in the satellites' infrared spectral profiles are explained by differences in the ice grains dimensions, changes in the water ice abundance and the presence of some contaminants. This research allowed to correlate spectral information with geological features at different scales, which is a fundamental step towards understanding the evolution of the satellites.

In my current research activity, I am following up the analysis of VIMS data for three other Saturnian icy satellites: Enceladus, Mimas, and Thetys. The main goal is to highlight E-ring deposits and to search non-water ice contaminants on their surface. The infrared spectra of the three satellites will be analyzed to map the global variation of the main water ice absorption features. This study has the goal to clarify which kind of endogenous and exogenous processes take place on the surface of Saturn' satellites and to understand if they are common for all moons or if some satellite shows a unique behavior.

A novel tumor suppressor function of RBL2/P130 protein in the control of epithelial-mesenchymal transition

Immacolata Vocca[1], Giuseppina Avverato[1], Luca Esposito[1], Francesca Pentimalli[1] and Antonio Giordano[1,2,3]
[1]Oncology Research Center of Mercogliano (CROM); Istituto Nazionale Per Lo Studio E La Cura Dei Tumori "Fondazione Giovanni Pascale"; IRCCS; Naples, Italy
[2]Department of Medicine, Surgery and Neuroscience, University of Siena, Siena, Italy
[3]Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, College of Science and Technology, Temple University, Philadelphia PA, USA

Introduction: The retinoblastoma family genes RB1, RBL2/p130 and RBL1/p107 play a well established role in controlling the G1/S cell cycle transition and recent studies have revealed also a function during differentiation, apoptosis, angiogenesis, senescence, genomic instability and tumor invasion. Consistently RB1 inactivation is involved in the advanced stages of various types of malignancies, including carcinoma of the breast, bladder, liver, esophagus and colon. Also, RB1 contributes to the maintenance of the epithelial phenotype and to the inhibition of tumor progression in MCF7 breast cancer cell line, thus revealing a new role for RB1 as an inhibitor of epithelial-mesenchymal transition (EMT). RBL2/p130 down-regulation has been associated with a poor prognosis and its expression is inversely correlated with tumor progression in a wide range of cancers, such as lung, prostate and endometrial. However, no studies so far addressed the possible RBL2/p130 involvement in the control of EMT. The aim of this study was to unravel the possible role of RBL2/p130 in the control of EMT in PC3 prostate cancer cells.
Materials and Methods: Experiments were performed on PC3 cells stably silenced for the expression of RBL2/p130. This silenced line (PC3 RBL2-) has been compared to the same cell line after transduction with a scrambled shRNA (PC3 scrambled). The morphology of the two cell lines after silencing was examined by immunofluorescence, whereas the expression of the classical EMT molecular markers was evaluated both by western blotting and by real time RT-PCR. The expression of miR-200c was also determined by real-time RT-PCR. PC3 RBL2- cells were transiently transfected with a plasmid containing the coding sequence of RBL2/p130 and EMT markers were determined by western blotting. Finally, functional assays, such as adhesion assays, wound healing and transwell assays and cell invasion assay through matrigel, were performed.
Results: RBL2/p130 loss determines a dramatic change in PC3 cytoskeletal architecture as well as molecular changes typical of EMT, characterized by the loss of epithelial markers such as E-cadherin and cytokeratin 18 and the expression of mesenchymal markers such as vimentin, ZEB1 and SNAIL. Also, miR-200b/c expression decreased in PC3 RBL2- cells. Both epithelial markers and miR-200b/c expression were recovered when PC3 RBL2- cells were transfected to re-express RBL2/p130 protein. From a functional point of view, RBL2/p130 loss determined a

reduced cell adhesion and a slight stimulating effect on matrigel invasion compared to control cells, with no apparent effect on the ability of cells to migrate.
Discussion: Our data reveal a new function for RBL2/p130 as an inhibitor of EMT. RBL2/p130 acts as a regulator of E-cadherin expression and its inactivation plays a role not only in the control of cell proliferation, but also in inducing EMT, contributing to tumor progression, invasion and metastasis. Our results demonstrate that RBL2/p130 could represent a new potential therapeutic target in prostate cancer and its restoration could provide a useful aid in cancer therapy.

NATIVE WHARTON'S JELLY: A NATURAL INJECTABLE BIOMATERIAL FOR AUTOLOGOUS TISSUE ENGINEERING APPLICATIONS

M. Wilkerson[a], S. Sahai[a], F. Vitale[b], D. Tsentalovich[b], S. Kiran[a], M. Pasquali[b], C.S. Cox Jr.[a] and F. Triolo[a]
[a]UTHealth - The University of Texas Health Science Center at Houston, USA [b]Rice University, USA

The mechanical properties of a regenerative biomaterial are fundamental to define critical design considerations for implant success. A natural biomaterial of great potential is native Wharton's Jelly (nWJ), the connective tissue matrix of the umbilical cord, a gelatinous substance comprised of proteoglycans and various isoforms of collagen and a rich source of perinatal stem cells, a bridge between embryonic and adult stem cells without the limitations of either. Since nWJ is typically discarded as post-delivery medical waste, its use, and/or the use of its cells, does not pose ethical concerns. To date, little is known on its mechanical characteristics despite their importance in developing innovative nWJ-based therapies. Through the use of a combination of biophysical and cell biology techniques, we show that WJ is among the softest tissues in the body, yet has the potential to differentiate into bone. This suggests its potential use for regenerative applications in a wide range of tissues. WJ has a porous structure, which provides an environment suitable for cell migration and tissue integration. Rheological studies show that WJ is viscoelastic, undergoes shear thinning behavior and is thixotropic in nature, which is an ideal property for injectable biomaterials. Overall, the data show that nWJ is a natural 3D biomatrix with elastic and resilient thixotropic properties that are desirable for potential applications in tissue engineering and suggest that WJ could potentially be used as a natural "tissue engineering" construct for various autologous tissue repair and regenerative clinical applications, as it would provide a natural scaffold derived from the recipient's own molecules, naturally seeded with the recipient's own stem cells, avoiding immune rejection.

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