Senato della Repubblica

Camera dei Deputati

UNDER THE AUSPICES OF THE
Senato della Repubblica
Camera dei Deputati
Presidenza del Consiglio dei Ministri
Ministero degli Affari Esteri
Ministero della Gioventu`
Ministero della Salute
Istituto Superiore della Sanita`

COM.IT.ES

Comitato degli Italiani all'Estero
Committee for Italians Abroad

In cooperation with

CONSULATE GENERAL OF ITALY IN HOUSTON

Present:

The 6th Conference of Italian Researchers

"The contribution of Italian Researchers in the World"
nel 150 anniversario dell`Unita`d`Italia

Italians and Americans together in the research and scientific fields for a better future in the World

Chairman: Vincenzo Arcobelli, President Comites
Director: Andrea Duchini, M.D, FACP

DECEMBER 4, 2010
ITALIAN CONSULATE
AUDITORIUM
1330 POST OAK BOULEVARD
HOUSTON, TEXAS 77056

Messaggio del Chairman

A nome di tutto il Comitato degli Italiani all`estero della circoscrizione consolare di Houston che comprende gli Stati dell`Arkansas, Louisiana, Oklahoma e Texas, desidero rivolgere il saluto ed il benvenuto a tutti i partecipanti alla sesta conferenza dei ricercatori italiani.

Questa straordinaria edizione coincide con l`inizio della memorabile celebrazione del 150 mo anniversario dell`Unita' d`Italia che vedra' per tutto il 2011 iniziative sia in Italia che all`estero, tese a valorizzare un momento storico ,culturale e di coesione nazionale.

Sono molti i messaggi di apprezzamento arrivati per questa occasione dalle piu' alte cariche dello Stato, da prestigiose Autorita' Istituzionali, Politiche , Accademiche , con i saluti ed i riconoscimenti rivolti a tutti i ricercatori che risiedono e che sono in missione all'estero.

Dopo cinque edizioni, assieme si e' riusciti a sollecitare attraverso i documenti presentati e a far capire alle Autorita' competenti , dell`importanza e delle risorse eccezionali che mettono in campo con il proprio lavoro e con le capacita`, i nostri professionisti ,i nostri ricercatori,i nostri imprenditori ed industriali residenti all`estero al servizio del Paese Italia. Infatti al Parlamento ci sono alcune proposte di legge, scaturite dai nostri convegni, una e' quella di creare un Albo/Anagrafe dei Ricercatori Italiani all'estero, mentre altri suggerimenti sono arrivati al Ministero dell'Istruzione per la riforma dell'Universita`. Il recente incontro svoltosi a Cernobbio, organizzato dal Ministero della Salute, ha coinvolto numerosi ricercatori della nostra circoscrizione con la partecipazione attiva al primo congresso internazionale indirizzato agli scienziati, rendendosi conto finalmente delle potenzialita`, auspico una continuazione per tale ed apprezzata manifestazione.

Siamo consapevoli che con i limitati mezzi e risorse a disposizione non e' facile portare avanti progetti ed iniziative, ma i nostri sacrifici,la nostra passione , il nostro amore per la Madre Patria cosi come il rispetto e la gratitudine per gli Stati Uniti d'America ci deve far superare gli ostacoli, con il quizzo inventivo e di genialita` che ognuno dei nostri validi connazionali mette al servizio della comunita` in cooperazione con la rete diplomatica consolare .

Orgogliosi e riconoscenti per gli uomini e le donne del mondo della ricerca ed in particolare a coloro che sono parte integrante della nostra comunita`, perche' rappresentano una proiezione dell`immagine nazionale che arricchisce il prestigio , evidenziando una delle parti piu' vive e di successo della nostra societa`,un immagine che ha benefici incalcolabili per il nostro sistema Italia. In un mondo cosi altamente competitivo e globalizzato e' di fondamentale importanza sostenere la comunita' dei ricercatori all`estero, per sviluppare e rafforzare i rapporti con le istituzioni italiane,con la nostra comunita` e tra colleghi, bisogna investire sempre di piu` nel settore della ricerca per avere un futuro migliore, nel progredire e per poter salvare vite umane.

Desidero ringraziare il Console Generale Nava ed i suoi collaboratori per averci ospitati e per l`attivo sostegno affinche` questa edizione si potesse realizzare. Al nostro Ambasciatore Giulio Terzi e al prof. Devoto per essere stati sin dal primo momento entusiasti e vicini a questo evento, gratitudine in particolare all`amico Dr.Duchini, ai membri del Comites, all`ing.Papi e Manuela Tentoni, alla commissione giovani con Francesco Tuzzolino e Nneka, a tutti i volontari che hanno contribuito per il successo di questa manifestazione , al CTIM, agli ospiti speciali provenienti dall`Italia , il Sen.Prof.Mario Baldassarri ed il pres.di Rai Corporation Dr.Magliaro, ai rappresentanti istituzionali dello Stato del Texas, ai ricercatori della Sbarro Institute del prof.Giordano di Philadelphia, a tutti i ricercatori presenti ed ai partecipanti.

Un sentito e particolare pensiero e tributo va alle donne e agli uomini, personale militare e civile, che hanno sacrificato la propria vita durante missioni di ricerca e sperimentazione.

Grazie di cuore a tutti
Viva l`Italia e God Bless America!

Vincenzo Arcobelli
Presidente Comitato Italiani all'Estero
Circoscrizione Consolare di Houston

Director's Message

I am honored to introduce this year special symposium *"Italy in Space"* that will discuss past, present and future prospective of Italian research in the field of aerospace and astronautics as part of the broader 6th conference of Italian researchers abroad. We are very thankful to our presenters who put together an impressive and exciting program that underlines how Italy has been at the lead in the field of aerospace since the beginning of the century and remains deeply committed to space exploration.

Ing. Ciancone from NASA will present the work of space flight visionary Luigi Gussalli who was one of the first to envision interplanetary spaceflight. Prof. Emeritus Angelo Miele, from Rice University will present a review of his theorem about image trajectories in the Earth-Moon space travel and will talk about the limitations that we, as human, will face in space. We are proud to recognize Ing. Miele's lifetime achievements and how his seminal work led to the human flight to the moon by the Apollo program. Ing. Fusco from Boeing will discuss the educational opportunities that the United Space Academy offers to students around the world. His work is critical in keeping the enthusiasm that led us to the moon and the space station alive in the younger generations. Dr. Ruttley from NASA will review the space station facilities used for research projects led by Italian researchers, and some of the consolidated international achievements to date. Dr Garofalo from University of Texas Medical Branch will present one of these specific projects where we'll learn how the immune system responds to prolonged period in space. His work will be critical in understanding how human can sustain prolonged trip to Mars and beyond as well as having important repercussion on earth medicine.

Finally, the ASI-ALTEC Italian team at the Johnson Space Center, led by Ing. Romanelli, Ing. Priotto and Ing. Chiarenza, will present the current involvement and contribution of Italy to the space station deriving from the NASA-ASI bilateral co-operation agreements, as well as the future exploration derived by the International Planetary Exploration Program. An extraordinary event in Italy's spaceflight history will happen in April 2011 when astronaut Paolo Nespoli, on board the International Space Station (ISS) for a 6-month mission, will be joined for about two weeks by astronaut Roberto Vittori. We are honored to foresee such an event and we will have Col. Vittori speaking in person at our symposium while Ing. Nespoli will be in remote connection.

Space remains not only the final frontier for mankind but also a special place in our imagination. The leading role that our country is playing in this field is something that makes us all, in Italy and abroad, more than proud. I welcome all the participants to this symposium and thank all of those who made this conference again possible this year.

Best wishes to all the Italian researchers in the world.

Andrea Duchini, MD, FACP
Houston, TX, November 25, 2010

STATE OF TEXAS
OFFICE OF THE GOVERNOR

Greetings:

As Governor of Texas, it is my pleasure to welcome everyone attending the sixth conference of Italian American Researchers in the World hosted by the Committee for Italians Abroad.

Texas boasts a population of dedicated, innovative and highly intelligent people from all walks of life, each of whom contributes to Texas' economic success. Italian Americans have greatly contributed to the diversity of the community and the business world.

I have every expectation that this conference will be an overwhelming success. This forum provides you the chance to network and share the expertise necessary to meet the demands of the future. Communities across Texas and the nation will directly benefit from your focus.

First Lady Anita Perry joins me in sending best wishes for an informative event.

Sincerely,

Rick Perry

Rick Perry
Governor

Il Consigliere Diplomatico
del Presidente della Repubblica

Roma, 3 novembre 2010

Caro Dr. Arcobelli

a nome del Signor Presidente della Repubblica, desidero ringraziarLa vivamente per la Sua cortese lettera del 14 ottobre scorso, con la quale ha voluto illustrare al Capo dello Stato il programma ed i contenuti della VI Conferenza "Ricercatori italiani nel mondo; passato, presente e futuro" in programma il prossimo 4 dicembre presso il Consolato d'Italia a Houston, estendendo altresì al Presidente Napolitano un invito a prendere parte alla manifestazione.

Il Capo dello Stato mi ha pregato di farmi tramite del suo vivo apprezzamento per l'iniziativa assunta anche quest'anno dal vostro Com.It.Es. La realtà dei numerosi e qualificati ricercatori italiani impegnati in importanti Università e Centri di ricerca in vari Paesi del mondo, ed in particolare negli Stati Uniti, merita la massima attenzione e sostegno ed è importante che essi siano incoraggiati a mantenere vivi i rapporti di collaborazione tra di loro e con l'Italia.

Purtroppo il fitto calendario di impegni non consente al Presidente di accogliere il gentile invito. Egli formula tuttavia i migliori auguri di successo a questa importante iniziativa.

Mi e' gradito in questa occasione porgerLe i cordiali saluti del Capo dello Stato, cui volentieri unisco i miei personali.

Mi creda

Stefano Stefanini

(Amb. Stefano Stefanini)

Gentile Dottor
Vincenzo Arcobelli
Presidente Com.It.Es.
3513 Hidden Forest Drive
Flower Mound, Texas 75028
USA

Il Presidente del Senato della Repubblica

GENTILE PRESIDENTE, LA RINGRAZIO PER IL CORTESE INVITO A PARTECIPARE ALLA SESTA EDIZIONE DELLA CONFERENZA "RICERCATORI ITALIANI NEL MONDO: PASSATO, PRESENTE E FUTURO", CHE SI TERRÀ IL 4 DICEMBRE PROSSIMO A HOUSTON IN TEXAS. NON POTRÒ ESSERE TRA VOI, MA SONO LIETO DI INVIARLE UN PENSIERO AUGURALE ATTRAVERSO IL COLLEGA MARIO BALDASSARRI, PRESIDENTE DELLA COMMISSIONE FINANZE E TESORO, CHE MI RAPPRESENTA ALLA VOSTRA RIUNIONE. INNANZITUTTO DESIDERO ESPRIMERE IL MIO PLAUSO PER L'INIZIATIVA, FONDAMENTALE MOMENTO D'INCONTRO PER LA COMUNITÀ ITALIANA RESIDENTE ALL'ESTERO, IMPEGNATA NEI PIÙ DIVERSI CAMPI DI RICERCA. LA SCIENZA È UN MOTORE POTENTE E INDISPENSABILE PER LO SVILUPPO E IL PROGRESSO, E INFLUENZA IN MODO STRAORDINARIO LA CAPACITÀ DI COSTRUIRE UN FUTURO MIGLIORE PER TUTTI. VALORIZZARE IL SETTORE DELLA RICERCA È UNO DEI PRINCIPALI OBIETTIVI CHE L'ITALIA DEVE PERSEGUIRE AL FINE DI FAVORIRE L'ACCESSO AL MONDO DEL LAVORO DI PROFESSIONISTI COMPETENTI, IN GRADO DI AFFERMARSI A LIVELLO INTERNAZIONALE E DI PROMUOVERE LE NOSTRE ECCELLENZE. SONO CERTO CHE QUESTO EVENTO SARÀ MOLTO PROFICUO PER LO SCAMBIO DI IDEE FRA I RICERCATORI E LA COMUNITÀ ITALIANA E ITALO-AMERICANA, E RINGRAZIO PROFONDAMENTE TUTTI I NOSTRI CONNAZIONALI, CHE CON IL LORO LAVORO PORTANO ALTO IL NOME DELL'ITALIA NEL MONDO. AUGURANDO OGNI SUCCESSO ALLA MANIFESTAZIONE E INVIO A LEI E A TUTTI I PARTECIPANTI I MIEI PIÙ CORDIALI SALUTI.

RENATO SCHIFANI

VINCENZO ARCOBELLI
PRESIDENTE COM.IT.ES

IL PRESIDENTE DELLA CAMERA DEI DEPUTATI

Dr. Vincenzo ARCOBELLI
Presidente del Com.It.Es
Circoscrizione consolare di Houston

MESSAGGIO

Desidero far giungere il mio più cordiale saluto a Lei, gentile Presidente, ed a tutti i partecipanti alla VI Conferenza "*Ricercatori italiani nel mondo; passato, presente e futuro*", promossa dal Com.It.Es della Circoscrizione consolare di Houston con il patrocinio del Consolato Generale d'Italia a Houston.

Sono motivo di orgoglio per il nostro Paese i molti giovani talenti dalle indubbie capacità intellettuali che hanno modo di dimostrare all'estero la propria professionalità e preparazione.

Nell'ambito delle politiche economiche nazionali che ovviamente devono fare i conti con la situazione finanziaria di ciascun Paese, il finanziamento della ricerca scientifica e tecnologica, costituisce un investimento doveroso e prioritario, nella convinzione che la promozione della ricerca scientifica sia comunque uno degli scopi fondamentali di ogni classe dirigente.

L'Italia deve impegnarsi particolarmente per sostenere i nostri scienziati e i nostri ricercatori anche in ambito internazionale garantendo, al contempo, la concreta possibilità di tornare ad operare in Italia in strutture adeguate a sostenerne in maniera efficace l'impegno.

Nell'esprimere il mio apprezzamento per il significativo supporto offerto dai Com.It.Es alle comunità italiane all'estero, desidero inviare a Lei ed a tutti coloro che animeranno la Conferenza un sentito augurio di buon lavoro.

Gianfranco Fini

Il Ministro degli Affari Esteri

Roma, 22 OTT. 2010

Gentile Presidente,

La ringrazio vivamente per il cortese invito a presenziare alla Sesta Conferenza "Ricercatori Italiani nel Mondo: Passato, Presente e Futuro", che si svolgerà il prossimo 4 dicembre a Houston.

L'evento, promosso dal Com.It.Es. da Lei presieduto, costituisce un'importante occasione di incontro e confronto tra ricercatori italiani e statunitensi. Favorendo lo scambio dei risultati della ricerca e la diffusione delle relative informazioni, la Conferenza consente di valorizzare la professionalità dei nostri studiosi all'estero e contribuisce allo sviluppo della scienza.

L'iniziativa rappresenta, inoltre, un valido esempio dell'azione che i Comitati per gli Italiani all'estero possono svolgere per le nostre comunità, la loro integrazione nel tessuto locale e i loro legami con l'Italia.

Impegni istituzionali non mi consentono di essere presente all'evento, ma desidero comunque far giungere a Lei e a tutti i partecipanti alla Conferenza un augurio di buon lavoro, insieme ai miei più cordiali saluti.

Dottor Vincenzo Arcobelli
Presidente del Com.It.Es. Texas
HOUSTON

Il Ministro della Salute

1742/conv/FF/10

Roma, 28/10/10

Caro Presidente,

La ringrazio per il cortese invito a partecipare alla Sesta Conferenza "Ricercatori Italiani nel Mondo; Passato, Presente e Futuro", che si terrà a Houston Texas il prossimo 24 dicembre. Purtroppo, concomitanti impegni istituzionali non mi consentono di intervenire.

Formulo i miei migliori auguri per il successo dell'iniziativa e La saluto cordialmente.

Ferruccio Fazio

Dr. Vincenzo Arcobelli
Presidente Committee for Italians Abroad
Hidden Forest Drive
Flower Mound, Texas 75028 USA

Ministero della Difesa
IL SOTTOSEGRETARIO DI STATO

Roma, 19 novembre 2010

Caro Dott. Arcobelli,

sin da subito intendo ringraziarLa per la considerazione avuta nei miei riguardi mediante il gradito invito recapitatomi in merito alla sesta conferenza "Ricercatori Italiani nel Mondo; Passato, Presente e Futuro" che si terrà a Houston il prossimo 4 dicembre.

Ho appreso con reale piacere che anche quest'anno, il prestigioso accadimento vedrà la partecipazione di studiosi, professionisti ed imprenditori del nostro Paese che hanno scelto coraggiosamente di contribuire, a livello internazionale, alla ricerca e alla produzione, ponendo le proprie capacità in dimensioni economiche, sociali ed imprenditoriali tradizionalmente diverse.

Devo, però, comunicarLe che in quella stessa data impegni istituzionali già da tempo calendariati mi vedranno presente altrove.

Ricalcando le Sue lodevoli parole al riguardo dei nostri italiani all'estero e nell'osare aggiungerne delle mie personali che si riferiscono al quel valore aggiunto da essi derivante attraverso il "fare e fare bene", oltre a manifestarLe il sentimento di orgoglio che mi caratterizza ogni qual volta ne ho modo di parlare, intendo palesare loro, per il Suo tramite, il mio vivissimo ringraziamento per quanto hanno sinora realizzato e per quanto continueranno a fare per il bene dell'Italia.

Ad maiora.

On. Guido CROSETTO

Dottor
Vincenzo ARCOBELLI
Presidente del Comitato degli Italiani all'Estero - (COM.IT.ES)
3513 Hidden Forest Drive - Flower Mound, Texas
Dallas – Texas
75028 USA

Camera dei Deputati

Decano del Parlamento Italiano

MESSAGGIO DELL'ON. MIRKO TREMAGLIA

in occasione della

VI CONFERENZA DEI RICERCATORI ITALIANI NEL MONDO
Houston, 4 dicembre 2010

Cari Connazionali,

è con grande dispiacere che non potrò presenziare alla **VI Conferenza dei Ricercatori Italiani nel Mondo**. La mia assenza, tuttavia, non m'impedisce di condividere a distanza e con tutto il cuore una iniziativa così prestigiosa.

Anni fa, durante il mio mandato come Ministro per gli Italiani nel Mondo, decisi di organizzare il "Primo Convegno degli Scienziati Italiani all'estero" per riunire gli Scienziati ed i Ricercatori di origine italiana che maggiormente si erano distinti nel settore di attività scientifica rafforzando in tal modo il prestigio dell'Italia all'estero e l'immagine delle nostre Comunità nel rispettivo Paese di residenza con un significativo apporto al progresso di questi Paesi.

E proprio sulla scia di questo primo Convegno che il Comandante Vincenzo Arcobelli e il COM.IT.ES., con la collaborazione ed il supporto del Consolato Generale d'Italia a Houston e del CTIM – Comitato Tricolore per gli Italiani nel Mondo, ha voluto riunire ogni anno Scienziati e Ricercatori di origine italiana per celebrarne l'affermazione ed il successo che hanno avuto e per sottolineare l'importanza del contributo che hanno dato alle relazioni scientifiche tra l'Italia ed i Paesi che li ospitano, stimolando sinergie e collaborazioni con gli Scienziati e con i Ricercatori che operano in Italia.

Considero sempre con grande stima simili manifestazioni, che sono il segno inequivocabile non soltanto dei meriti e della dedizione al lavoro dei nostri emigrati e dei loro discendenti, ma soprattutto del rinnovato senso di appartenenza che unisce i nostri Connazionali nel mondo.

Un «orgoglio d'Italianità» assolutamente apprezzabile e del tutto legittimo perché, ben lo sa chi da decenni segue da vicino le vicissitudini, troppo spesso dolorose, degli Italiani nel Mondo, contribuisce a restituire appieno la coscienza di quanto, in termini di civiltà e progresso, i nostri connazionali hanno fatto e seguitano a fare. E' con grande piacere e interesse quindi che plaudo a questa iniziativa cosi meritevole.

Invio alle Autorità presenti ed a tutti gli intervenuti, con il mio affettuoso abbraccio, anche gli auspici più fervidi per l'ottima riuscita della Conferenza e sappiate che vi sono vicino come lo si è alle persone più care. Gli Italiani all'estero sono la mia vita, la mia famiglia!

Un saluto ITALIANISSIMO.

On. Mirko Tremaglia

Camera dei Deputati

Un saluto a tutti i partecipanti a questa 6a edizione della Conferenza dei Ricercatori italiani nel Mondo ed un grazie sincero a chi ha lavorato per realizzarla. Credo sia doveroso per il Parlamento italiano rendere un doveroso omaggio a quanto questa Conferenza vuole rappresentare.

L'Italia spesso dimentica che, in tutto il mondo, migliaia e migliaia di ricercatori italiani lavorano nel campo delle scienze, della cultura, della medicina rappresentando il meglio nei loro settori e ricordando con orgoglio la loro origine italiana.

Credo – anche perché due anni fa ho avuto la possibilità di prendervi parte – che l'incontro di Houston sia di grande importanza, ma non solo come riscoperta delle proprie origine italiana, ma anche per sottolineare come troppe volte in Italia non si investa abbastanza in queste ricerche tanto che i migliori cervelli del nostro paese sono obbligati ad emigrare per poter mettere a frutto i propri studi.

E' importante allora che il Consolato Generale d'Italia a Houston ed il Comites abbiano avuto la costanza di continuare questi incontri annuali - pur tra tante difficoltà - in una città che rappresenta l'esempio più avanzato dello sviluppo scientifico, medico ed aerospaziale del mondo e quindi si presta particolarmente come vetrina ad un convegno di alto valore scientifico e morale. Un ringraziamento particolare credo vada al comandante Vincenzo Arcobelli che di questo meeting è anima e bandiera ed a tutti i suoi collaboratori del Comites per tutto quello che fanno per la nostra comunità e per il buon nome dell'Italia nella grande ed amica nazione americana.

Come responsabile del Comitato Parlamentare degli Italiani del Mondo della Camera dei Deputati sento il desiderio di esservi vicino almeno con uno scritto, sicuro che questa giornata non solo sia importante, ma anche ribadisca che l'Italia sta nel cuore di tutti i partecipanti, siano ricercatori da poco emigrati o già da tanti anni inseriti nella realtà americana.

Un saluto affettuoso ed a tutti una calorosa stretta di mano

On. Marco Zacchera
Presidente Comitato Permanente Italiani all`Estero
Camera dei Deputati

Ministero degli Affari Esteri

Direzione Generale per gli Italiani all'Estero
e le Politiche Migratorie

n. 35174

Roma, 26 ottobre 2010

Gentile Presidente,

ho il piacere di comunicarLe la concessione del patrocinio da parte di questo Ministero degli Affari Esteri alla VI Conferenza "Ricercatori italiani nel mondo: passato, presente e futuro", che si svolgerà il prossimo 4 dicembre a Houston.

Desidero complimentarmi, caro Presidente, per questa importante iniziativa che negli anni si è via via ampliata fino a rappresentare un vero punto di riferimento in materia.

Augurando pieno successo alla prossima edizione, voglia gradire i miei migliori saluti da estendere a tutto il Comites.

Cari saluti,

(Min. Plen. Carla Zuppetti)

Sig.. Vincenzo Arcobelli
Presidente del Comites
HOUSTON

Istituto Superiore di Sanità
IL PRESIDENTE
00161 ROMA
VIALE REGINA ELENA, 299

PRE-724/10
AF-B-3
E-2

11/11/10

Com.te Vincenzo ARCOBELLI
Presidente Comitato
Italiani Estero-Houston
3513 Hidden Forest Drive
Flower Mound, Texas 75028
U.S.A.

Gentile Presidente,

La ringrazio molto per il Suo cortese invito alla sesta conferenza "Ricercatori Italiani nel Mondo – Passato, Presente e Futuro", che si svolgerà a Houston il prossimo 4 dicembre. La devo purtroppo informare che impegni istituzionali improcrastinabili non mi consentiranno di essere presente.

Esprimo un vivo apprezzamento per l'organizzazione di questo evento che quest'anno dedicherà una particolare attenzione alle attività relative alla partecipazione italiana ai programmi spaziali.

Sono pertanto sinceramente lieto di assicurare il patrocinio dell'Istituto Superiore di Sanità a questa sesta Conferenza dei Ricercatori italiani.

Desidero inoltre formulare i miei complimenti per le attività che il Comitato svolge presso gli Italiani all'estero. Voglio infatti figurarmi il Comites nella sua accezione latina come "coloro che accompagnano nel viaggio, nella sorte" i nostri connazionali che, nonostante prestino la loro opera di ingegno in un paese straniero, lontani dalle loro radici, portano in alto il buon nome dell'Italia oltre i confini. Di quell'Italia che è stata unita 150 anni fa ma che è stata "fatta" non solamente attraverso il Risorgimento ma anche attraverso i secoli di storia, di arte, di cultura e di civiltà che hanno caratterizzato la nostra penisola.

Certo che non mancheranno altre occasioni per poter approfondire sia i temi trattati durante la manifestazione sia le finalità stesse per le quali opera il Comitato, mi è gradita l'occasione per porgere a nome mio personale e dell'istituzione che rappresento i miei più sinceri auguri di un sereno e proficuo lavoro a Lei e a tutti i partecipanti all'evento.

Con molti cordiali saluti.

Enrico Garaci

Ambasciata d'Italia
Washington

L'Ambasciatore

17 novembre 2010
Prot. 5641

Caro Comandante,

desidero esprimerLe le mie più vive felicitazioni per la sesta edizione della Conferenza dei Ricercatori Italiani nel Mondo, che si conferma un appuntamento di significativo rilievo nel quadro delle attività dedicate alla ricerca italiana negli Stati Uniti.

Di particolare interesse e' la formula della Conferenza che, da un lato ha un intento divulgativo, quello di portare a conoscenza del grande pubblico i risultati di alcune importanti ricerche effettuate da studiosi italiani in diversi settori, dalla medicina alla tecnologia, dalla fisica all'ingegneria; dall'altro, si pone come momento di incontro fra ricercatori provenienti da diverse realtà americane, dando loro l'opportunità di scambiarsi i risultati dei rispettivi studi e di entrare in comunicazioni con i colleghi in Italia.

Quest'anno poi la Conferenza acquista un rilievo speciale, dal momento che si pone nel contesto delle celebrazioni per il 150° anniversario dell'Unità d'Italia. Essa contribuisce così a dare del nostro paese l'immagine di una realtà avanzata, all'avanguardia nei più diversi campi della ricerca, fra cui proprio quello aerospaziale, cui è dedicata in modo speciale questa edizione dell'iniziativa.

Il fatto poi che la Conferenza si svolga a Houston, sede non solo del Johnson Space Center ma anche di alcuni fra i più moderni centri di ricerca medica degli Stati Uniti, contribuisce a dare a questo incontro un rilievo anche maggiore.

Che la conferenza sia ormai un appuntamento atteso lo dimostrano anche i numerosi riconoscimenti che essa ha ricevuto da parte delle Autorità italiane: dal messaggio del Capo dello Stato, al patrocinio del Senato della Repubblica, da quello del Ministero della Salute a quello del Ministro della Gioventù.

Mi dispiace molto che non mi sia possibile partecipare: concomitanti impegni mi impediscono purtroppo di farlo.

Ringrazio vivamente Lei, Presidente Arcobelli e gli altri Consiglieri del Comites di Houston per l'impegno instancabile nella organizzazione di tale evento e formulo gli auguri più fervidi per uno svolgimento sereno e proficuo dei lavori.

Con i saluti più cordiali e vive cucine

Giulio Terzi

Comandante Vincenzo ARCOBELLI
Presidente del Comites
Houston

Il Console Generale d'Italia
Houston

E' con vero piacere che presento il mio saluto ai partecipanti alla Sesta Conferenza dei Ricercatori Italiani nel Mondo.

Questa riunione, frutto della attiva collaborazione tra il Comites ed il Consolato Generale di Houston, e' cresciuta nel corso degli anni sino a diventare uno dei principali appuntamenti per la comunita' dei ricercatori e degli studiosi italiani nel mondo, ed evidenziare i risultati con i quali gli stessi onorano il nostro Paese.

E' un motivo di particolare prestigio per questo Consolato Generale la circostanza che la Conferenza dei Ricercatori Italiani nel Mondo si svolga a Houston, una citta' che, oltre ad essere una delle capitali mondiali dell'energia, e' anche un importantissimo centro di studio per la ricerca medica e spaziale grazie all'eccellenza degli Istituti ed Agenzie che ospita ed all'indiscussa competenza dei ricercatori che vi lavorano, tra cui figurano numerosi nostri connazionali. In questa ottica, la Conferenza consente di incoraggiare e sostenere il dialogo tra il mondo della ricerca italiano e le realta' locali e dimostrare che, nonostante le distanze, "Italy matters for Houston", ma anche che "Houston matters for Italy". Tale discorso puo' e deve essere esteso anche ad altre realta' nel piu' ampio ambito delle relazioni scientifiche tra Italia e Stati Uniti, la cui importanza cruciale per entrambi i Paesi non ha bisogno di essere ulteriormente sottolineata.

Mi e' gradita l'occasione per presentare a tutti voi i miei migliori saluti ed auguri di buon lavoro.

Fabrizio Nava
Console Generale

Ambasciata d'Italia
L'Addetto Scientifico

3000 Whitehaven St. NW
Washington

20 novembre 2010

Caro Presidente,

Desidero innanzitutto ringraziarTi per il cortese invito alla sesta conferenza "Ricercatori Italiani nel Mondo – Passato, Presente e Futuro" che si svolgerà a Houston il prossimo 4 dicembre. Sarà per me un vero onore poter partecipare: ho partecipato a tre delle precedenti edizioni ed ogni volta la conferenza mi ha permesso di incontrare la nostra splendida comunità scientifica.

Anche quest'anno la manifestazione organizzata dal COMITES di Houston ci offrirà la preziosa opportunità di apprezzare l'ottimo lavoro che i nostri ricercatori, in tutte le discipline, portano avanti; per discutere delle loro iniziative; per promuovere e fornire sempre maggiore impulso alla rete dei ricercatori italiani all'estero.

In attesa di incontrarti a Houston, gradisci, insieme ai miei ringraziamenti, i miei più cordiali saluti

Con molta stima ed amicizia

Alberto Devoto

Comandante Vincenzo Arcobelli
Presidente
Comitato degli Italiani all'Estero
3512 Hidden Forest Drive
Flower Mound, TX 75028

Telefono 202 612 4431 Fax 202 518 2147 e-mail alberto.devoto@esteri.it

UNDER THE AUSPICES OF THE PRESIDENT OF THE REPUBLIC OF ITALY

ON MARCH 17, 1861, ITALY BECOMES ONE NATION AFTER ALMOST HALF CENTURY STRUGGLE, *IL RISORGIMENTO*.

ITALY@150 CELEBRATES ITALY'S 150TH ANNIVERSARY IN WASHINGTON, DC, AND THROUGHOUT THE UNITED STATES, WITH A SERIES OF ACTIVITIES THAT WILL TURN 2011 INTO AN "ITALIAN YEAR."

Il Comites della circoscrizione consolare di Houston in rappresentanza della collettivita' Italiana per gli Stati dell'Arkansas, Louisiana, Oklahoma e Texas si unisce alle celebrazioni per la commemorazione del 150 Anniversario dell` Unita d`Italia

Programma

10.00 National Anthem

Opening Remarks
Andrea Duchini
Vincenzo Arcobelli

Welcome
Consul General of Italy
Fabrizio Nava

Massimo Magliaro
Presidente Rai Corporation
The Role of the Media for Science and the future

Alberto Devoto
Scientific Attache` Embassy of Italy
A brief overview of the scientific and technological cooperation between Italy and the United States of America

Sen Mario Baldassarri
President Economic and Finance Committee Senate of Italian Republic
Scientific Research and New Technology for future growth and equilibrium in the World

Amir Mirabi
Manager - International Business, Office of the Governor – State of Texas
Texas – Leader in the Global Economy

11.30-12.30 Medicine
Moderators: Marco Marcelli, Michele Sartori

Joseph Cotropia, *Bioclonetics*
Immunology and HIV
Antibody Discoveries for Human and Veterinary Immunotherapeutics Directed Against Infectious Disease and Pathogens

Chiara Gabbi, *University of Houston*
Internal medicine
Sex Differences in nuclear receptor actions

Luca Cicalese, *University of Texas Medical Branch*
Transplant Surgery
Artificial Organs

Antonio Giordano, Flavio Rizzolio, Giuseppe Russo, Raffaele La Montagna, *Temple University*,
Oncology, Molecular medicine
Sbarro Health Research Organization (SHRO)

12:30-13:00 Humanities
Moderator
Francesca D'Alessandro Behr

Salvatore Napolitano, *California Institute of Technology*
Art history
Pietro Vivenzio; Natural Phylosophy, collecting and strategies of self promotion in Naples between 18th and 19th centuries

Maria Wells, *University of Texas, Austin*
Italian Literature
Italian Collections at the Harry Ransom Humanities Research Center: from Dante to Carlo Levi.

13.00-13:25 Lunch Break

13:25 Special Communication;
Vito M. Campese, *University of Southern California*
How to transform the Italian brain drain into opportunities. The role of ISSNAF

13.45 -15.00 Science and Physics
Moderators; Paolo Papi, Alessandro Piovaccari

Luigi Colombo, *Texas Instruments Incorporated*
Electronics
Graphene for Beyond Scaled CMOS

Daniel Minisini, *Shell*
Geology
Two exotic views: seascapes of the deep oceans and extraterrestrial landscapes

Matteo Pasquali, *Rice University*
Chemistry
Two applications of carbon nanotubes to medicine and energy

Paolo Decuzzi, *The Methodist Hospital Research Institute*
Nanotechnology
Rational Design of Multifunctional Nanoconstructs for Biomedical Imaging and Ablation Therapy

Ennio Tasciotti, *The Methodist Hospital Research Institute*
Nanotechnology
Bio-inspired camouflage and cell mediated transport of nano-systems for drug delivery

15.00-17.00
Symposium
"Italy in Space"

Introduction
Andrea Duchini
Comites, TX

Francesco Fusco
The Boeing Company
FISE (Foundation for International Space Education)-United Space School

Angelo Miele
Rice University
Revisit of the Theorem of Image Trajectories in the Earth-Moon Space

Roberto Garofalo
University of Texas Medical Branch
Effect of Space Flight on Innate Immunity to Respiratory Viral Infections

Michael L. Ciancone
NASA-JSC
Luigi Gussalli – Italian Spaceflight Visionary (1885-1950)

Tara M Ruttley
NASA-JSC
International Space Station Utilization and Achievements

Cristoforo Romanelli, Gustavo Priotto, Orazio Chiarenza
Astronaut Roberto Vittori
ASI/ALTEC JSC Liaison Office
The Italian participation in the Human Spaceflight and Planetary Exploration
An extraordinary event for Italy in space: two Italian astronauts meet on orbit in 2011

17.00- 18.00

Introduction to Plenary Session
Dibattito
Moderators; Cristiana Rastellini, Luca Cicalese

Sen. Prof.Mario Baldassarri
Presidente 6 Commissione Permanente Finanze e Tesoro-Senato della Repubblica
Presidente di Economia Reale

Vincenzo Arcobelli,
Presidente Comitato Italiani all'Estero

Consul General of Italy
Fabrizio Nava

Alberto Devoto
Attache` Scientifico Ambasciata Italiana a Washington

Giovanni Abbadessa
Arqule, Boston

18:00 Final remarks - Documento Finale
Andrea Duchini, Vincenzo Arcobelli
Comites, Houston TX


VI Conferenza dei Ricercatori
Houston, Texas
4 Dicembre 2010

Abstracts

Governor Rick Perry Biography

Sworn in as the state's 47th governor on December 21, 2000, Rick Perry was elected to a four-year term November 5, 2002 and re-elected November 7, 2006.

A fifth generation Texan, Governor Rick Perry has taken an extraordinary Texas journey, from a tenant farm in the rolling West Texas plains to the governor's office of our nation's second largest state.

Texas' 47th governor, and the first Texas A&M graduate to occupy the Governor's Mansion, Rick Perry has led a life of public service, starting in the United States Air Force and continuing over two decades in elected office.

Governor Perry's administration has focused on creating a Texas of unlimited opportunity and prosperity by improving education, securing the border and increasing economic development through classic conservative values. Under Governor Perry's leadership, lawmakers concluded the most recent legislative session with a balanced budget, a tax cut for 40,000 small businesses in Texas and billions of dollars in the Rainy Day Fund.

During his tenure, Governor Perry has maintained a strong focus on fiscal discipline, leading the state out of a $10 billion budget deficit in 2003 by cutting government spending. He is also the only Texas governor since World War II to sign budgets that reduced general revenue spending. In addition, he has used his line item veto to scrub more than $3 billion in spending from those budgets, while encouraging investments in the building blocks of a prosperous state: the economy, education and security.

The Texas economy is performing well in the current global economic crisis, thanks to a focused effort to keep taxes low, regulations predictable and legal system fair. Gov. Perry led the effort to reform the legal system, signing into law a series of lawsuit reforms designed to stem the flow of frivolous lawsuits through Texas courts. As a result, employers can devote their resources to creating jobs instead of defending against those frivolous lawsuits. More importantly, the reforms reversed the trend on skyrocketing malpractice insurance rates which has led to an influx of doctors seeking to practice in Texas. As a result, obstetricians and other specialists are returning to practice in previously underserved, high-risk areas.

On the education front, Governor Perry has worked to improve the quality of Texas schools from top to bottom by increasing accountability, raising expectations and funding programs that work. In addition to introducing the largest teacher incentive pay program in the country, Governor Perry has overseen a 43 percent increase in total spending on public education in Texas. He also signed a school finance reform package that provided a 33 percent school property tax reduction, a $2,000 pay raise for teachers, record funding for classrooms and a reformed business tax.

Stepping into the gap left by the federal government, Governor Perry has worked with the legislature to fund coordinated border security efforts to the tune of more than $230 million over the past several years. Pursuing a "boots on the ground" strategy, the approach of integrating and coordinating local, county, state and federal law enforcement efforts, this effort has decreased crime in key areas by more than 60 percent.

Rick Perry's political career started in 1985 as a representative for a rural West Texas district in the state House of Representatives. He was first elected to statewide office in 1990, and served as Texas Commissioner of Agriculture for two terms. Governor Perry hails from Paint Creek, a small farming community north of Abilene. His father, Ray Perry, served as a Haskell County Commissioner, school board member and a World War II tail gunner. Between 1972 and 1977, Governor Perry served in the United States Air Force flying C-130 tactical airlift aircraft in the U.S., Europe and the Middle East.

He is a 1972 graduate of Texas A&M University where he was a member of the Corps of Cadets, a junior and senior yell leader and an animal science major. The younger of Ray and Amelia Perry's two children, Governor Perry is an Eagle Scout and lifetime member of American Legion Post #75.

He first met Anita Thigpen at a piano recital during their elementary school years. They married in 1982 and are the proud parents of two grown children - Griffin and Sydney.

Sen. Prof.Mario Baldassarri

Presidente 6 Commissione Permanente Finanze e Tesoro-Senato della Repubblica , Presidente di Economia Reale

Curriculum vitae

Mario Baldassarri è nato a Macerata, Italia, il 10 settembre 1946. Si è laureato in Economia all'Università di Ancona nel 1969 ed ha ottenuto il dottorato (Ph. D.) in Economia presso il Massachusetts Institute of Technology, Cambridge, USA, nel 1977, con i relatori Robert Solow, Franco Modigliani and Paul Anthony Samuelson.

Viceministro dell'Economia e delle Finanze nella XIV Legislatura (2001-2006). Senatore della Repubblica nella attuale legislatura.

a) Incarichi accademici

-1988 ad oggi: Professore Ordinario di Economia all'Università "La Sapienza" di Roma

- 1979-1988: Professore Ordinario di Economia all'Università di Bologna.

- 1974-1978: Professore Associato di Economia all'Università Cattolica di Milano

- 1970-1974: Assistente di Economia all'Università di Torino.

b) Attività Scientifica e pubblicazioni

Dal 1987 al 2001 è stato editore della "Rivista di Politica Economica " pubblicata dalla S.I.P.I. Confindustria, e ad oggi Presidente del Comitato Scientifico. E' editore delle "Monografie RPE" collana pubblicata dalla S.I.P.I. Roma e della "Central Issues in Contemporary Economy Theory and Policy" collana pubblicata dalla Palgrave & Macmillan, di Londra.

I suoi lavori scientifici sono indirizzati verso analisi teoriche ed empiriche del ruolo del bilancio pubblico sul sistema economico sia in termini di controllo congiunturale, sia in termini di sviluppo strutturale. Si è occupato, inoltre, di problemi relativi alle politiche monetarie e alle politiche industriali, nonché di problemi riguardanti la struttura del mercato del lavoro e l'occupazione. Nella sua attività professionale si è occupato di strategie economiche, industriali e finanziarie, di analisi di paese e di mercato con particolare riguardo al nord ed al sud America, di analisi e valutazioni di progetti di investimento con studi di fattibilità economica, industriale e finanziaria, di pianificazione aziendale e di controllo di gestione.

c) Altre esperienze professionali

E' stato Consigliere Economico presso il Ministero delle Finanze, il Ministero del Bilancio, il Ministero del Tesoro e la Presidenza del Consiglio dei Ministri in precedenti Governi Italiani.

E' stato Membro della Commissione Tecnica sulla Spesa Pubblica del Ministero del Tesoro, del Comitato Scientifico del Ministero delle Partecipazioni Statali, del Comitato Nazionale della Scienza e della Tecnica del Ministero dell'Università e della Ricerca Scientifica.

1980-2001: Consigliere Economico della Confindustria.

Mario Baldassarri was born in Macerata, Italy, on September "10th, 1946. He graduated from the University of Ancona with a degree in Economics in 1969 and obtained a Ph.D in Economics in 1977 from Massachusetts Institute of Technology, Cambridge, USA, with advisors Robert Solow, Franco Modigliani and Paul Anthony Samuelson. Member of the Italian Government as Vice-Minister of the Economy and Finance (since 2001 to 2006). Today President of the 6th Commission Finance and Treasurer as Senator of Italian Republic.

a) Academic positions

- 1988 to present (on leave for the position of Vice-Minister): Professor of Economics, University of Rome "La Sapienza".
- 1979-1988: Professor of Economics, University of Bologna.
- 1974-1978: Associate Professor of Economics, Catholic University of Milan.
- 1970-1974: Assistant Professor of Economics, University of Turin.

b) Scientific activity and publications

- From 1987 to 2001 he was editor of the "Rivista di Politica Economica" published by S.I.P.I.Confindustria in Rome, and currently he is President of the Scientific Board. He is aldo editor of the "Monografie RPE" book series publishedby SIPI-Confindustria and the "Central Issues in Contemporary Economy Theory and Policy" series published by Palgrave Macmillan &Co., London.
- Author of several books and scientific publications on a wide range of economy issues, theoretical analysis and empirical evidence of the role of Government Budget on the economy system both in terms of economy control and stabilization and in terms of exogenous and endogenous growth. He has also been working on problems related to monetary policy and to industrial policy, as well as on problems on the structure of labour market and employment.

c) Others professional experiences

- Senior Advisor to a number of Finance Ministers, Treasury Ministersand Prime Ministers of various Italian governments.
- 1980-2001 : Advisor to Confindustria, the Italian association of industries.
- Advisor to a number of major Italian multinational corporations on investment strategies in North America and South America.
- 1984-1988: Member of the Board of Directors of EFIM, a former state manufacturing conglomerate.
- 1982-1988: Member of the Board of Directors of ENI, Italy's state oil company.

PUBLICATIONS : go to "Pubblicazioni scientifiche" on the web-site

- Author of 10 scientific books
- Editor of 22 books of RPE Series - SIPI, Rome
- Editor of 50 books of Central issues in Contemporary Economic Theory and Policy Series - Palgrave & Macmillang, London
- Author of more then 50 scientific articles
- Author of more then 400 newspaper's articles

THE WORLD ECONOMY TOWARDS GLOBAL DISEQUILIBRIUM

American-Asian Indifference And European Fears

INTODUCTION AND MAIN CONCLUSION

In the first five years of this new century a new era is being ushered in the world economy. During the course of this new era Asia (led by China and India) will become the leader in world growth and the globalization process.

An impressive shortening of the length and an acceleration in the passing of eras seem, therefore, to characterise this new scenario.

For almost two thousand years man has experienced eras lasting about 500 years each. In the last century two different eras can be distinguished, each one of them lasting around 50 years. At the end of the first 5 years of this new millennium, however, a completely new era seems ready to appear.

This kind of acceleration implies that, while in the previous eras, twenty and then at least two generations were involved in the change over, under these new conditions we seem to be facing a case of overlapping generations because the behavioural adjustment cannot be spread over several generations and over a long period of time, but it must be faced at the same time by sons, fathers, grandfathers and maybe even by great-grandfathers. This is what we aim to stress as a premise.

In Chapters 1 and 2, we focus on the last era we lived through during the second half of the 20th century and we try to single out the major foundations of the world economy within this period which do not exist any longer.

During the present era 2000-2005, China's average growth rate has been approximately 8/9% per year, while US growth has been 3 to 4% and the Eurozone rate of growth has been around 1%.

If we project these rates in the long run and we consider Purchasing Power Parity GDP, as we do in Chapter 3 then, after 2020, the new G8 will consist of China as its leader, followed by United States, India, Russia, Japan, Brazil and Korea.

OFFICE OF THE GOVERNOR
RICK PERRY

AMIR M. MIRABI
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Amir Mirabi

Manager – International Business
Office of the Governor –State of Texas

Amir Mirabi serves as Manager of International Business in the Office of Governor Rick Perry. A native of Houston, Mr. Mirabi's academic and career pursuits have taken him to over 40 countries in the Americas, Europe, Africa, and Asia, where he has dealt with a variety of business, economic and political matters. His prior public policy work engagements have included the US House of Representatives, the Council on Foreign Relations and the Center for Strategic and International Studies in Washington, DC.

Mr. Mirabi received his BA with Honors from the University of Texas at Austin, his MSc with Distinction from the London School of Economics and attended the University of Houston Law Center. Mr. Mirabi is proficient in French, Spanish and Persian.

MASSIMO MAGLIARO

- Diploma maturita' classica conseguito al Liceo "Pilo Albertelli" di Roma
- Corso di Laurea in Scienze Politiche all'Universita' "La Sapienza" di Roma

LINGUE STRANIERE

- Francese
- **Spagnolo**

ESPERIENZE DI LAVORO

- Giornalista-professionista dal 5 maggio 1972
- Redattore del quotidiano del M.S.I. "Il Secolo d'Italia" dal 1 marzo 1970 al 1 marzo 1976: ne diviene Redattore capo centrale dal 1974
- Addetto all'Ufficio stampa del M.S.I.-DN dal 1 marzo 1976, di cui diviene responsabile il 4 novembre 1978, incarico che mantiene fino al 15 gennaio 1990: prima con la Segreteria Almirante e poi con la Segreteria Fini
- Fondatore e Direttore responsabile dell'agenzia quotidiana del M.S.I.-DN "Nuove prospettive" dal 4 novembre 1978 al 15 gennaio 1990
- Socio fondatore nel 1971 e membro del Consiglio direttivo dell'Istituto di Studi Corporativi fino al 1978
- Socio fondatore nel 1971 e Capo redattore della "Rivista di Studi Corporativi" fino al 1978
- Fondatore e Direttore responsabile dell'agenzia settimanale dell'ISC "L'informazione corporativa" dal 1972 al 1978
- Redattore della Direzione esteri della RAI dal 1 luglio 1991: ne

diviene inviato di esteri a novembre dello stesso anno: direttore Giorgio Brovelli

- Inviato della Redazione esteri del Giornale radio unificato dal marzo 1993: direttore Livio Zanetti
- Vice direttore del Tg1 dal 5 novembre 1994 al 16 dicembre 1996: direttori: Carlo Rossella, Nuccio Fava e Rodolfo Brancoli
- Corrispondente della RAI da Parigi e Madrid dal 1 novembre 1997 al 31 luglio 1998
- Vice direttore vicario di Rai International dal 1 agosto 1998: direttori Roberto Morrione e Giancarlo Leone
- Direttore di Rai International dal 9 marzo 2000 al 28 novembre 2006
- Direttore della Divisione TV Canale 1 e 2 dal 29 aprile 2002 al 31 maggio 2004
- Presidente della NewCo Rai International S.p.A. dal 28 febbraio al 3 novembre 2003
- Amministratore Delegato della NewCo Rai International S.p.A. dal 3 novembre 2003 al 20 giugno 2007
- Presidente di Rai Corporation - Italian Radio TV System e Rai Corporation Canada - Italian Radio TV System dal 4 agosto 2009

PUBBLICAZIONI

"Storia di un partito differente", **Ed. Nuove Prospettive, 1981**
"L'alternativa in movimento", **Ed. Nuove Prospettive 1983**

A brief overview of the scientific and technological cooperation between Italy and the United States of America

Alberto Devoto, Ph.D.
Scientific Attaché
Embassy of Italy
Washington D.C.

Italy and United States on 1 April 1988 signed in Rome an agreement for Scientific and Technological. The status of this agreement is reviewed every two years and the tenth review meeting will be held in Rome on December 13, 2010.

The current status of the collaboration will be presented with particular emphasis on the areas of highest priority for the Italy and the United States.

Curriculum Vitae: Alberto Devoto

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e-mail: alberto.devoto@esteri.it

Education

Laurea in Fisica, Università degli Studi di Cagliari, Cagliari, Italy, December 1970.
M.S. (Physics), The Johns Hopkins University, Baltimore MD, October 1975.
Ph.D. (Physics), The Johns Hopkins University, Baltimore MD, November 1977.

Professional employment

Professore Incaricato, Istituto di Fisica; Università degli Studi di Cagliari, Cagliari, Italy
January-November 1978.
Research Associate, Department of Physics; Michigan State University, E. Lansing, Michigan;
September 1978-June 1979 and July 1980-July 1981.
Member of Technical Staff, Bell Laboratories Murray Hill, New Jersey
July 1979-June 1980.
Visiting Assistant Professor, Department of Physics Florida State University, Tallahassee, FL;
August 1981-June 1985.
Ricercatore, I.N.F.N., Gruppo Collegato di Cagliari;
Cagliari, Italy; October 1986-March 1988.
Professore Associato, Dipartimento di Fisica,
Università degli Studi di Cagliari, Cagliari, Italy; March 1988-present.
Scientific Attaché, Embassy of Italy; Washington, DC
September 2004-present

Responsibilities:

Scientific collaboration between Italian and US Universities, Research Centers and Organizations. Contacts with Italian scientists and researchers working in the USA.

Fabrizio Nava

Consul General of Italy in Houston

NOTE BIOGRAFICHE

Fabrizio Nava e' nato a Roma nel 1969. Nel 1993 si e' laureato in Scienze Politiche presso l'Universita' di Roma "La Sapienza".

In seguito a esame di concorso, nel 1995 e' entrato nella carriera diplomatica. Il suo primo incarico e' presso la Direzione Generale per gli Affari Politici del Ministero degli Esteri.

Dal 1998 al 2002 presta servizio all'Ambasciata d'Italia in New Delhi (India) con l'incarico di Primo Segretario per gli affari consolari e stampa. Nel corso della sua missione ottiene un diploma post-laurea in Diritti Umani, Diritto Umanitario Internazionale e Diritto dei Rifugiati presso la Indian Academy of International Law di New Delhi.

Nel 2002 viene destinato all'Ambasciata d'Italia in Ottawa (Canada), dove ricopre l'incarico di Primo Segretario per gli Affari Commerciali.

Nel 2006 rientra al Ministero degli Esteri a Roma, dove ricopre l'incarico di Capo Segreteria e Capo Ufficio presso la Direzione Generale per la Cooperazione allo Sviluppo.

Dal 15 luglio 2010 ha assunto le funzioni di Console Generale a Houston, competente per Texas, Louisiana, Oklahoma e Arkansas.

Fabrizio Nava parla correntemente inglese, francese e spagnolo, ed ha una buona conoscenza del tedesco. E' coniugato con una figlia.

Dedicated Symposium

"Italy in Space"

Contributions 2010


Multi-Purpose Logistics Module
MPLM
For The Long Haul


LEONARDO • RAPHAEL • DONATELLO
NASA/
MSFC
MPLM Sustaining Engineering • Pressurized Payload Group

The Italian participation in the Human Spaceflight and Planetary Exploration

Abstract

The activities dedicated to the Human Spaceflight have been usually identified with the future, while the observation of planetary objects like Moon and Mars have been identified, to some extent, with the glorious history of ancient astronomy. In reality, researchers and engineers in the space industry today must confront themselves with the change of perspective and with the paradigm that is reflected in the future scenario of the following Space sectors:

- An existing and continuously operative International Space Station
- An International Planetary Exploration program, to be shaped and conducted at the edge of the innovation, characterized by breakthroughs in technological advancement.

The object of the presentation is to outline how Italy and its industry is now acting to preserve and guarantee their presently recognized role of excellence in such a highly innovative scientific and technological sector.

The present involvement and contribution of Italy to such a unique space research and technology platform, which is the ISS, is described with particular attention to those elements deriving from the NASA-ASI bilateral co-operation agreements, as well as the prospective utilization of the ISS as a test bed for the future exploration.

Concerning the International Planetary Exploration Program, the role of the Italian industry in the on-going program is outlined, and an overview of the predicted significant investments in the competition for the technological innovations, that such a long-term program with strategic implications naturally involves, is provided.

An extraordinary event for Italy in space:

two Italian astronauts meet on orbit in 2011

Abstract

An unprecedented meeting for the young Human Spaceflight history of Italy will take place in April 2011, when astronaut Paolo Nespoli, on board the International Space Station (ISS) for a 6-month mission, will be joined on orbit for about two weeks by astronaut Roberto Vittori, who is a crew member of the Shuttle flight STS-134, carrying the important scientific instrument Alpha Magnetic Spectrometer and other experiments and supplies to the ISS.

The presentation gives an overview of the goals of the two missions, the main scientific payloads that are present on board and the joint operations planned during the time the Shuttle will be docked to the ISS. A description of the roles and responsibilities of the two astronauts on board the two space vehicles will also be given, with special attention to their involvement in the execution of the international and Italian scientific programs foreseen during the missions. A video interview of Paolo Nespoli, recorded at JSC before his departure for Russia, will be shown, and some highlights of the upcoming STS-134 flight will be illustrated.

Biographies:

Ing. Cristoforo Romanelli

Mr. Romanelli is the General Manager of ALTEC (Advanced Logistic Technology Engineering Center) in Turin, Italy, formed by Thales Alenia Space Italia (TAS-I), the Italian Space Agency (ASI), and ICARUS, a company owned by Local Government Bodies and Finmeccanica.

Mr. Romanelli previously held several key positions of management in large Italian Companies, including the Oil Supply Planning of AGIP (State Oil Company, ENI Group), the Value Added Services Marketing of Telecom Italia, the Strategic Planning of STET (State Telecom Holding), Assistant to the President of IRI (the largest State Financial Holding), Assistant to the CEO, External Relations and Corporate Affairs at Finsiel (Information Technology).

In 2001 he took on the duties of Senior Vice President and Assistant to the CEO of Alenia Aeronautica, Finmeccanica Group, in Rome. In 2003 he became CEO of Quadrics Ltd. (Supercomputers), an Alenia Aeronautica's subsidiary company in the UK, and CEO of Quadrics Inc. in the US.

In 2009 Mr. Romanelli was appointed as Senior Advisor to ALTEC's President, and in 2010 he accepted the General Manager position.

He graduated in Electrical Engineering from the University of Rome "La Sapienza", and followed with specialization courses in Business Administration at the Faculty of Economics of the same University, at the ENI and IRI schools, at the Bocconi University.

Mr. Romanelli received William Pitt Fellowship from Pembroke College, University of Cambridge, UK.

Ing. Gustavo Priotto

Mr. Priotto is the Head of the ASI/ALTEC Liaison Office at the NASA Johnson Space Center, where he represents the Italian Space Agency (ASI) and the Advanced Logistic Technology Engineering Center (ALTEC) to the International Space Station (ISS) Program Office, and supports NASA and ASI's bilateral cooperation on the ISS Program. As an engineer, Mr. Priotto specializes in Operations, Utilization, and Sustaining Engineering of the Multi-Purpose Logistics Modules (MPLM) / Permanent Multipurpose Module (PMM). He was instrumental during the MPLMs design and development, post-delivery processing and testing at the Launch/Landing Site, Kennedy Space Center, and initial operations phases. His duties currently include integrating the MPLMs/PMM for flight on the Space Shuttle and the ISS, real time operations support, and ensuring that the MPLMs/PMM maintain operational capability.

Mr. Priotto previously held several key leadership positions and led multidisciplinary teams in the Alenia's Space Systems Group, Turin, Italy, including engineering personnel management and supervision for different program phases, Operations and Logistics Manager and Sustaining Engineering Manager. He also held key leadership positions in the initial development of the today's European Space Agency Columbus attached laboratory.

Mr. Priotto graduated in Electrical Engineering from the State University of Cordoba, AR, and performed post-graduation studies at the University of Turin, Italy. He also performed Finmeccanica's training courses in project/program management, creating winning technical proposals, building high performance teams, and others. He received numerous NASA awards during the latest 15 years of ISS design, development and operations.

Ing. Orazio Chiarenza

Mr. Chiarenza is a former staff member of the European Space Agency (ESA), who was based at ESA's European Astronaut Center (EAC) in Cologne, Germany, and assigned from 1999 to 2008 to NASA's Johnson Space Center in Houston, as manager of the EAC Liaison Office, with the duties of providing support to the European astronauts training at JSC in preparation for their Shuttle and International Space Station (ISS) missions. From 2009, Mr. Chiarenza has been a Human Space Flight Operations consultant, supporting the Italian Space Agency's liaison office at JSC (ASI-ALTEC resident office), providing assistances to NASA and to the preparation of Italian astronauts and space science experiments sponsored by the Italian Space Agency, for Shuttle and ISS missions.

Col. ITAF Roberto Vittori

Astronaut

Roberto Vittori is a colonel in the Italian Air Force. Following his graduation from the Air Force Academy in 1989, he had responsibility roles in programs, such as the development of the Euro-Fighter aircraft, the Beyond Visual Range Air-to-Air Missile, and the Flight Safety at the Italian Test Center. He has logged nearly 2500 flight hours in over 40 different aircraft types, and holds a Master Degree in Aeronautical Sciences from the University of Naples and a Master Degree in Physics from the University of Perugia. In 1998, he was selected as an astronaut with the European Space Agency (ESA), and sent to NASA's Johnson Space Center, where he completed a basic training program that qualifies astronauts for future assignments to Space Shuttle and International Space Station missions. In August 2001, he took up training as Soyuz board engineer at the Yuri Gagarin Cosmonaut Training Centre in Star City, near Moscow, in preparation of his first spaceflight of Spring 2002. The ten-day mission, called "Marco Polo", included the execution of several Italian experiments in the International Space Station. In October 2004, Vittori resumed Soyuz training at Star City for his second mission to the ISS, in Spring 2005. This mission, called "Eneide", lasted also ten days and was dedicated to science.

From 2005, while still on ESA's active astronaut list, Vittori carried out duties for the Italian Air Force and the Italian Government: he served as Deputy Head of the International Relations Office of the Air Force, as a representative of the Defense Department in the Science and Technology Committee of the Italian Space Agency, and was a technical coordinator of the joint space initiatives between the Research and Defense Departments. He also taught the course "Human Spaceflight" at the Aerospace Engineering Department of "La Sapienza" University in Rome. In December 2008, Vittori returned to JSC, to continue his training for future Space Shuttle and ISS missions. In August 2009, Vittori was assigned as a Mission Specialist to the Shuttle mission STS-134, which will carry to the Space Station the Alpha Magnetic Spectrometer, AMS-2, and is currently training for that flight, scheduled for late February 2011 .

Title of Report: "Luigi Gussalli – Italian Spaceflight Visionary (1885-1950)"

Authors: CIANCONE, Michael L. and Diana MOTTA RUBAGOTTI

Abstract:

Luigi Gussalli was a solitary inventor and spaceflight visionary. His most enduring legacy is his primacy as the author of the first Italian book of speculative non-fiction on human spaceflight in which he proposes the use of his "double-reaction" motor for interplanetary spaceflight. He refined his ideas in later books and introduced the idea of using solar radiation for powering the motor and as a direct means of interplanetary propulsion. Although contemporaries acknowledged his passion and imagination, they were critical of the technical soundness and practicality of his ideas. Nonetheless, the infusion of new ideas was certainly a useful stimulus in the developing field of astronautics.

The Fondazione Civilità Bresciana, Brescia, Italy (directed by Monsignor Antonio Fappani) maintains the Gussalli archives, which are available for scholarly research. The Fondazione published *Luigi Gussalli – pioniere dello spazio* (Brescia, 2002), edited by Giovanni Caprara. The book includes reprints of Gussalli's published works, with English translations, as well as articles discussing the life and work of Gussalli. This paper makes generous use of information provided by the Fondazione.

Biography:

Michael L. Ciancone

Spaceflight Safety Engineer

NASA Johnson Space Center

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Michael Ciancone is an engineer at the NASA Johnson Space Center, where he has provided support to the Constellation Program over the past four years as a spaceflight safety specialist for human spaceflight programs. Mr. Ciancone previously served as the Executive Officer for the ISS/Shuttle safety panel responsible for assessing the safety of payload experiments that would operate on ISS and the Space Shuttle. He was instrumental in establishing a safety panel at ESTEC (the technical branch of ESA, located in Noordwijk, The Netherlands) to complement the activities of the NASA Payload Safety Review Panel.

In addition to his duties as an engineer, Mr. Ciancone is also active in the field of spaceflight history. He currently serves as the Chairman of the History Committee of the American Astronautical Society and is a member of the History Committee of the International Academy of Astronautics. He was an editor on *Space Exploration and Humanity – A Historical Encyclopedia* that was published by ABC-CLIO in 2010.

Mr. Ciancone received a BS in Engineering (Fluid & Thermal Sciences) and a BA in Psychology from Case Western Reserve University in Cleveland, Ohio, U.S.A.

Tara M Ruttley, PhD

International Space Station Utilization and Achievements

With the assembly of the International Space Station (ISS) nearing completion and the support of a full-time crew of six, a new era of utilization for research is beginning. For more than 15 years, the ISS international partnership has weathered financial, technical and political challenges proving that nations can work together to complete assembly of the largest space vehicle in history. During the ISS assembly phase, the potential benefits of space-based research and development were demonstrated; including the advancement of scientific knowledge based on experiments conducted in space, development and testing of new technologies, and derivation of Earth applications from new understanding. The configurability and human-tended capabilities of the ISS provide a unique platform that provides for an international utilization strategy based on research ranging from physical sciences, biology, and medicine, to Earth observation, human exploration preparation and technology demonstration. This presentation will summarize ISS facilities available for research, some examples of ISS investigations led by Italian researchers, and some of the consolidated international achievements to date.

Biography:

Dr. Ruttley is the Associate Program Scientist for the International Space Station (ISS) for the National Aeronautics and Space Administration (NASA) at Johnson Space Center (JSC) in Houston. Her role in the Program Science Office consists of ensuring science leadership at the highest level within the ISS Program Office, representing and communicating all research on the space station, and supporting recommendations to the ISS Program Manager and to NASA Headquarters, regarding research on the ISS. Prior to her role in the ISS Program Science Office, Dr. Ruttley served as the lead flight hardware engineer for the ISS Health Maintenance System, and later for the ISS Human Research Facility. She is currently also an adjunct professor at the University of Houston Clear Lake, where she teaches an undergraduate Human Physiology course. She has a Bachelor of Science degree in Biology and a Master of Science degree in Mechanical Engineering from Colorado State University, and a Doctor of Philosophy degree in Neuroscience from the University of Texas Medical Branch. Dr. Ruttley has authored publications ranging from hardware design to neuroadaptation, and also holds a U.S. utility patent.

Foundation for International Space Education (FISE) overview.

Abstract

The Foundation for International Space Education (FISE) is a non-profit charity (501c3) with the mission to provide space-based academic instruction to international pre-collegiate students, while offering an introduction and orientation to the aerospace industry.

Biography

Francesco Fusco is a system engineer at Boeing with significant experience in international space and aeronautics programs. After completing his thesis during an internship at NASA-Lyndon B. Johnson Space Center, he was awarded the Laurea in Ingegneria Aerospaziale by the Politecnico di Torino. He joined Alenia Flight Test in Caselle Torinese and supported Eurofighter (EF2000) flight test activities as propulsion, avionics and weapon systems specialist. During Space Shuttle Return to Flight he joined the Boeing Company where his current position is Responsible Engineer for the RCS (Reaction Control System) thrusters.
Francesco is a member of the Foundation for International Space Education (FISE) Board of Directors and serves as the Country Manager for students from Italy.

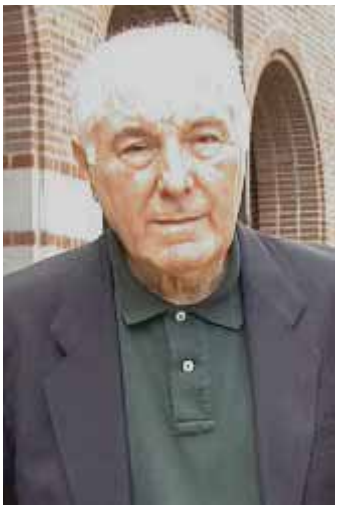
Revisit of the Theorem of Image Trajectories in the Earth-Moon Space

Angelo Miele

Abstract

On the occasion of the 50th anniversary of the theorem of the image trajectories in the Earth-Moon space, the author revisits the theorem and clarifies the relation between the class of image trajectories and the class of symmetric free-return trajectories, which were employed in the Apollo program. In a nutshell, the symmetric free-return trajectories are those image trajectories that intersect the Earth-Moon axis orthogonally at some point above the far side of the Moon. Optimization implications are pointed out.

Keywords Lunar trajectories · Earth-Moon and Moon-Earth trajectories · Image trajectories · Symmetric free-return trajectories · Apollo program



Angelo Miele, Ph.D.

R. Eng. Research Professor and
Foyt Professor Emeritus

Flight mechanics, Astrodynamics,
Optimization Theory, Numerical Methods

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Angelo Miele, R. Eng. Research Professor and Foyt Professor Emeritus. Dr. Miele's research deals with flight mechanics, astrodynamics, applied aerodynamics, optimization theory, and numerical methods. He has authored several books and served as a member of several national and international technical committees. Dr. Miele is Editor in Chief of the Journal of Optimization Theory and Applications, and Editor of Mathematical Concepts and Methods in Science and Engineering. He is a Honorary Fellow of AIAA, Fellow of AAS, and member of the National Academy of Engineering, the Russian Academy of Science, and the International Academy of Astronautics.

A Life Devoted to Engineering;

Angelo Miele was destined to be an engineer. His kindergarten teachers, the Quartulli sisters, said so. They tutored Miele in Formia, Italy and told his mother that Miele would grow up to be an engineer and a professor.

It turns out that they were right. Miele did become an engineer, receiving his doctoral degrees in civil engineering and aeronautical engineering from the University of Rome (1944 and 1946, respectively). Those degrees helped launch a career that took Miele from Italy to Argentina and the U.S., his research helping to usher in both the jet age and space age.

Now, the town that gave Miele his birth is honoring him for his lifetime of work in engineering.

The mayor of Formia recently presented Miele with the Cicerone Citta' di Formia Prize (Cicero City of Formia Prize). Named for the famed Roman philosopher, the Cicero Association annually awards the city prize to a Formia native who has contributed greatly to the world.

"I've had many international acknowledgements," said Miele. "But this one, which comes from the town where I was born, is specially important for me."

Miele has a long history with the small town on Italy's western coast, which dates back to nearly 500 B.C. Miele's grandfather Angelo, for whom he's named, was the former mayor of Formia for a number of years in the mid-1800s. There are even two palaces in the city center, the Palazzi Miele, that bear his name. Even though Miele and his family moved to Rome in 1935, when he was 13, his extended family remained in Formia and he has kept a strong connection to the town of his birth. In 1992, the mayor named a street after his late brother Franco, a well-known painter and art critic.

"We must remember the people who are connected to our city, who have made a difference in the world," said Formia Mayor Michele Forte in presenting the award to Miele. "This city will always keep you in its affection."

Miele feels the same. He left Italy in 1947, emigrating to Argentina. He had wanted to be an aircraft designer, "but the Italian aeronautical industry was in total collapse after World War II." He was hired almost immediately by the Military Aircraft Company in Cordoba, where he was part of the research and design process. Following his tenure in Argentina, Miele came to the United States in 1952, where he taught classes in flight mechanics and control stability at the Polytechnic Institute of Brooklyn. Three years later, he joined the faculty at Purdue, where he taught and conducted research on jet propulsion and rocket power.

"It was a great time," he remembers. "It was the dawn of the jet age. We were researching the solutions to problems that contributed to the explosive advances over the last 50 years."

Miele's work in aeronautics caught the attention of Boeing and he left Purdue to work in the Boeing Scientific Research Laboratories. He loved the work and research over there and praises his Boeing colleagues as experts in almost every aspect of atmospheric and space flight.

"It was my good fortune to one day get a call from Walter Hiltner, the manager of Boeing's Moon program, asking me to work on lunar trajectories," said Miele. In due time, Miele's research led to the theorem of image trajectories in Earth-Moon space, one of his most important works.

"In a nutshell, the theorem establishes a relation of symmetry between outgoing trajectories and returning trajectories," says Miele. "It is interesting to note that a subclass of the class of image trajectories is that of symmetric free-return trajectories; these are those image trajectories designed so as to cross the Earth-Moon axis orthogonally (at 90 degrees)." In turn, the symmetric free-return trajectories were used by NASA in the Apollo program, missions from Apollo 1 to Apollo 11.

Miele stayed at Boeing for nearly five years, thoroughly enjoying his work and being a small part of the United States first forays into space. But, even though he was teaching part-time classes at the University of Washington, he missed being in the classroom full time.

Miele came to Rice in 1964, attracted in part by the university proximity to NASA. He was hired as Professor of Astronautics, but when the university created the Mathematical Sciences Department, Miele's title was expanded to Professor of Astronautics and Mathematical Sciences.

Alongside his teaching, Miele has advised some 85 graduate students working toward the PhD or MS degree. His work at Rice has included in particular research in numerical methods, among them the development of the family of sequential gradient-restoration algorithms for mathematical programming problems and optimal control problems. It has also covered the application of the above algorithms to the solution of a large number of problems of atmospheric flight and space flight. These include flight in wind shear, spacecraft rendezvous, orbital transfers, Earth to Moon trajectories, and Earth to Mars trajectories.

Miele says that Rice University has provided him with the right environment and the right kind of quality students needed for his aeronautical/astronautical work and research.

Over nearly the last half century, Miele founded (and has since retired from) the Journal of Optimization Theory and Applications, which is today reputed to be one of the best applied mathematics journals in the world.

" My good fortune has been to be in the right place at the right time solving the right kind of engineering problems" Miele said. "It is a long story, the story of the progress that we have made in aerospace. What we have learned is that everything is possible, albeit with some limitations imposed on us at any given time from the available technology".

Effect of Space Flight on Innate Immunity to Respiratory Viral Infections

Mouse Immunology-2

The Effect of Space Flight on Innate Immunity to Respiratory Viral Infections (Mouse Immunology-2) investigates the effects of microgravity on immune function against Respiratory Syncytial Virus (RSV). RSV is a virus that causes respiratory tract infections throughout life, from infancy to elderly. In microgravity, crewmembers experience changes in immune function. These studies will help scientists determine the biological significance of space flight-induced changes on anti-viral immune responses.

Hypothesis/Experiment Objectives:

- The Mouse Immunology-2 investigators hypothesize the following: space flight alters host response to respiratory viral pathogens; the deficient antiviral response is characterized by defect(s) in the innate immune response; and the central events are IFN-producing cells (Interferon-Producing Cells) and their impaired function as APC (Antigen Presenting Cells) or trafficking to the lung.

- Mouse Immunology-2 characterizes RSV replication in the lung and nasal tissue, disease severity, histopathology (microscopic examination of tissue), innate immune response and global protein expression in the lung.

- Mouse Immunolgy-2 experiments are conducted in mice flown in the Space Shuttle that will be infected with RSV immediately after their return to Earth.

- Mouse Immunology-2 experiments will also apply the mouse hindlimb unloading model (a ground-based model used to simulate some of the conditions of space flight and to reproduce its effects on the immune system) to study the response to RSV infection.

Research Description: The most prevalent acute respiratory tract illnesses in the general community are mostly benign, self-limiting events primarily following infections of the upper respiratory tract. The factors that contribute to the progression of upper respiratory tract infection to lower respiratory tract illness are not fully understood, but a robust innate immune response appears to be critical for limiting disease severity, blocking viral shedding (the movement by any route of a virus from an infected host) and person-to-person transmission. Viral lower respiratory tract illness contributes to a large portion of hospital visits in the United States for both adults and children. Respiratory Syncytial Virus (RSV) is the leading cause of lower respiratory tract illness in infants and children worldwide and is more often being

recognized as an important cause of respiratory illness in older adults. Most people who are otherwise healthy recover from an RSV infection in a couple weeks, while young children, the elderly and those with compromised immune systems, could have severe symptoms that require hospitalization and treatment. Since a vaccine has not been developed and immunity is only partial, re-infections with RSV are common throughout life.

The mechanisms by which RSV causes pulmonary disease and more specifically which factors determine disease severity still remains to be fully characterized. In RSV disease both viral replication and the exaggerated immune response to RSV infection are closely interrelated. Studies suggest that the pattern of cytokine production elicited by RSV affects the balance between virus replication and disease pathogenesis that ultimately determines the manifestations of the disease. Viruses have evolved numerous unique mechanisms to inhibit the host type I and type II antiviral IFN (Interferon) signaling pathways. IFN-α and IFN-β (type I) and IFN-γ (type II) are produced in the lung in response to microbial infection, and are potent activators of macrophage innate antimicrobial immunity. Viral infections trigger innate immune responses, including the production of type I interferon (IFN-α and -β) and other pro-inflammatory cytokines (cellular proteins that mediate the inflammation and communication between cells of the immune system) and chemokines (members of a large family of extracellular immunoregulatory proteins that primarily act as chemo-attractants for immune cells, recruiting them to areas containing infectious agents or other foreign particles).

Mouse models of viral infection provide a well established experimental system to study the immune response to RSV infection. The experiments proposed in the Mouse Immunology-2 project have not been previously performed. In particular, studies of RSV infection in mice after a space flight and comparison with control mice at ground conditions.

Research has shown that the immune system is compromised during and after spaceflight. In order to better understand why the body's mechanisms to fight off infection are weakened, scientists will fly mice into space for Discovery's 11-day mission. Mice will be assigned to one of three groups: 1) Flight (FLT) group will be housed in tow AEMs and flown in the Space Shuttle; 2) vivarium (VIV) at Kennedy Space Center (KSC) base; 3) simulated flight control in an Orbiter Environmental Simulator (OES). After the FLT group return to Earth and pass a medical examination, we will expose all assigned three mice groups to a respiratory syncytial virus (RSV).

This approach will allow us to quantitate the virus and inflammatory mediators (IFN-α/β and pro-inflammatory cytokine and chemokine) in the upper (nasal turbinate) and lower respiratory tract (lung), to evaluate disease severity by means of body weight loss, illness score, and histopathology abnormalities. Samples will be tested for multiple cytokines using the Bio-Plex Cytokine Mouse 23-Plex panel. The panel includes the following: interleukin (IL)-1α, IL-1β, IL-2, IL-3, IL-4, IL-5, IL-6, IL-10, IL-12 (p40), IL-12 (p70), IL-17, granulocyte colony–stimulating factor, granulocyte-macrophage colony–stimulating factor, IFN-γ, KC, MIP-1α, MIP-1β, MCP-1, RANTES, and tumor necrosis factor (TNF)-α.

In this study we aim to gain detailed insight into the molecular pathogenesis of respiratory virus infections by studying the protein expression profiles in RSV infected mice. To investigate this, we will apply a proteomics approach using high-resolution two-dimensional gel electrophoresis (2DE) and matrix-assisted laser desorption ionization-time of flight (MALDI-TOF) mass spectrometry (MS) to

evaluate relative changes in protein abundance in response to RSV infection. Differences in response to RSV will be evaluated by measuring gene expression profiles in lungs and thymus.

Mouse Immunology-2 aims to develop a similar approach in the hindlimb unloading model (a well-accepted ground-based model used to simulate some of the conditions of space flight and reproduce its effects on the immune system). Additionally, pulmonary function tests using whole-body unrestrained plethysmography (Buxco Electronics Inc. Troy, NY) will be used, to monitor the respiratory dynamics of mice after RSV infection in a quantitative manner. Measurement of airway responses will be performed on individual, unrestrained and non-anesthetized mice.

Conclusion: We will use RSV infection models to characterize viral replication in the lung and nasal tissues, disease severity, airway hyperresponsiveness, histopathology, and global protein expression in the lungs. Results of human and rodent studies on the effects of space flight on the immune system are limited, but we suggest that space flight has some detrimental effect on the response to infections, although little to no research has been conducted in the area of respiratory pathogens.

Space Applications: Space shuttle Discovery will bring NASA scientists one step closer to helping astronauts and the public discover ways to battle and prevent serious illness and infection. These investigations are expected to generate new scientific evidence of the immune pathways that are affected in antiviral host response during space flight and possible preventive or therapeutic approaches applicable to future space missions.

Earth Applications: Understanding the function of the immune system during space flight may have great relevance to our understanding of the process of aging and/or stress-related immunomodulation (adjustments in the level of an immune response) on Earth. In particular, studying the innate host response against pathogens during/after space flight will provide novel data on the function of the respiratory mucosal response to viral pathogens.

The goal of the Mouse Immunology-2 experiment is to discover what triggers and leads to an increased susceptibility to an infection. These findings can be used to help treat and prevent future astronauts from getting sick, as well as protect people with more vulnerable immune systems here on Earth, such as the elderly or young children.

Ground Based Publications:

1. Guerrero-Plata A, Casola A, Garofalo RP. Human metapneumovirus induces a profile of lung cytokines distinct from that of respiratory syncytial virus. *J.Virol.* 2005; 79(23):14992-14997.
2. Guerrero-Plata A, Baron S, Poast JS, Adegboyega PA, Casola A, Garofalo RP. Activity and regulation of alpha interferon in respiratory syncytial virus and human metapneumovirus experimental infections. *J.Virol.* 2005; 79(16):10190-10199.
3. Guerrero-Plata A, Casola A, Suarez G, Yu X, Spetch L, Peeples ME, Garofalo RP. Differential response of dendritic cells to human metapneumovirus and respiratory syncytial virus. *Am. J. Resp. Cell. Mol. Biol.* 2006; 34(5):643.
4. Castro SM, Guerrero-Plata A, Suarez-Real G, Adegboyega PA, Colasurdo GN, Khan AM, Garofalo RP, Casola A. Antioxidant treatment ameliorates respiratory syncytial virus-induced disease and lung inflammation. *Am. J. Res. Crit. Care Med.* 2006; 174(12):1361-1369.

5. Hosakote YM, Liu T, Castro SM, Garofalo RP, Casola A. Respiratory syncytial virus induces oxidative stress by modulating antioxidant enzymes. *Am. J. Resp. Cell. Mol. Biol.* 2009; 41(3):348-357.
6. Kolli D, Bataki EL, Spetch L, Guerrero-Plata A, Jewell AM, Piedra PA, Milligan GN, Garofalo RP, Casola A. T lymphocytes contribute to antiviral immunity and pathogenesis in experimental human metapneumovirus infection. *J. Virol.* 2008; 82(17):8560-8569.
7. Spetch L., Bowlin T.L., Casola A. Effect of NMSO3 treatment in a murine model of human metapneumovirus infection. *J.Virol.* 2008; 89:2709-2712.

Roberto Garofalo, M.D., is Professor, Departments of Pediatrics, Microbiology & Immunology, and Pharmacology & Toxicology, University of Texas Medical Branch. Dr. Garofalo serves as Vice Chair for Research and Director of the Division of Clinical and Experimental Immunology & Infectious Disease, in the Department of Pediatrics. Dr. Garofalo is a member of the Sealy Center for Vaccine Development, the Sealy Center for Environmental Health and Medicine, and the Sealy Center for Molecular Medicine.

Dr. Garofalo research interest is the ontogeny, function, and regulation of the airway mucosal immune system. Areas of investigations include the role of innate immunity in paramyxovirus infections (RSV and hMPV), pathogenesis of lung inflammation, and identification of strategies to treat or prevent these infections. Most of these studies are performed in murine models. Dr. Garofalo's laboratory is currently funded by federal grants and other extramural grants. He has served for a three year term as member of the Council for the Society of Pediatrics Research and currently serves as member of the fellowship committee for the Pediatrics Infectious Disease Society of America. Dr. Garofalo is a member of several national and international scientific organizations and is the current Chairman of the National Institute of Health "Innate Immunity and Inflammation" Study Section.

Original Contributions 2010

Medicine

Transplantation

Immunology

Oncology

Astronomy

Geology

Chemistry

Humanities

Nanotechnology

Electronics

Informatics

Economics

Political Science

Mechanisms of disease: Ectonucleotide pyrophosphatase phosphodiesterase 1 as a 'gatekeeper' of insulin receptors.

Abate N, Chandalia M, Di Paola R, Foster DW, Grundy SM, Trischitta V.

Insulin resistance is pathogenic for type 2 diabetes and cardiovascular disease. Several inhibitors of insulin signaling have a role in human insulin resistance. The transmembrane glycoprotein ectonucleotide pyrophosphatase phosphodiesterase 1 (E-NPP1; also known as plasma cell membrane glycoprotein PC-1) interacts with the insulin receptor and inhibits subsequent signaling by decreasing its beta-subunit autophosphorylation. E-NPP1 is overexpressed in skeletal muscle, adipose tissue and cultured skin fibroblasts of insulin-resistant individuals who are not yet obese or diabetic, which indicates that excessive E-NPP1 expression is an early, intrinsic defect in human insulin resistance. Genetic studies also support a primary role of E-NPP1 in insulin resistance. Among other variants, a missense polymorphism, Lys121Gln, has been described. The Gln121 variant is a stronger inhibitor than Lys121 of insulin receptor function, and is associated with insulin resistance, type 2 diabetes and both cardiovascular and nephrovascular complications in diabetic patients. E-NPP1 is measurable in human serum, where it might represent a valuable biomarker of insulin resistance, but its relationship to tissue and systemic insulin resistance remains to be thoroughly elucidated. Understanding the mechanisms that regulate E-NPP1 expression and/or function might render this protein a new target for strategies to treat and prevent type 2 diabetes and cardiovascular disease.

Nat Clin Pract Endocrinol Metab. 2006 Dec;2(12):694-701.

Nicola Abate, MD

Nicola Abate, MD, is Professor of Internal Medicine and Chief of Endocrinology and Metabolism at the University of Texas Medical Branch in Galveston. TX. He is also Clinical Professor at UT Southwestern in Dallas, TX. After earning his medical degree from the University of Modena School of Medicine in Modena, Italy, he completed his training in Internal Medicine, Endocrinology and clinical research at UT Southwestern Medical Center in Dallas, TX. He was Research Scholar in the Center for Human Nutrition and Assistant Professor of Internal Medicine from 1997 to 2002 when he was promoted to Associate Professor at the same Institution. He developed the Lipid and Heart Disease Risk Management Clinic at UT Southwestern which he directed until moving to UTMB in 2008. During this time he contributed significantly to the understanding of how obesity and fat distribution affects insulin resistance and its associated risk for development of type 2 diabetes and CAD. He has published over 70 manuscripts and book chapter and has been invited to numerous National and International meetings to lecture on the topic of obesity, insulin resistance and type 2 diabetes.

Dr. Abate's clinical interest is on obesity, prevention of diabetes and cardiovascular disease, using comprehensive clinical management of various components of the metabolic syndrome.

Dr. Abate is currently focusing his research interests on the metabolic and genetic causes of insulin resistance and the management of diabetes, hyperlipidemia, and the metabolic syndrome. He has been continuously funded by the NIH for the past 10 years for his studies on insulin resistance. He collaborates with research groups in the US, Italy, India and China on the topic of ethnic diversity in susceptibility to insulin resistance and diabetes.

Dr. Abate is a member of the American Diabetes Association, and the National Lipid Association. He is past President of the Southwest Chapter of the National Lipid Association (SWLA).

I. Borbath[1], A. Santoro[2], J. Van Laethem[3], B. Daniele[4], L. Cicalese[5], S. Zeuzem[6], P. Buggish[7], L. Bolondi[8], J. Strosberg[9], G. Abbadessa[10]

1. Cliniques Universitaires Saint Luc, Brussels, Belgium 2. Istituto Clinico Humanitas, Rozzano, Italy 3. Erasme University Hospital, Brussels, Belgium 4. Azienda Ospedaliera G. Rummo, Benevento, Italy 5. University of Texas, Galveston, TX, USA 6. J. W: Goethe-University Hospital, Frankfurt am Main, Germany 7. IFI Studien un Projekt GmbH, Hamburg, Germany 8. Policlinico S. Orsola Malpighi, Bologna, Italy 9. Moffit Cancer Center, Tampa, FL, USA 10. ArQule Inc,. Woburn, MA, USA

ARQ 197-215: a randomized, placebo-controlled phase 2 clinical trial evaluating the c-Met inhibitor, ARQ 197, in patients (pts) with hepatocellular carcinoma (HCC)

Background: ARQ 197 is a selective, non-ATP competitive inhibitor of c-MET, the exclusive tyrosine kinase receptor for hepatocyte growth factor (HGF) implicated in tumor cell migration, invasion, proliferation, and angiogenesis. Over-expression of c-Met and HGF is associated with poor prognosis in patients with HCC. A previously reported phase I study (ASCO 2009 abstract #3523) demonstrated the safety, MTD, and PK of ARQ 197 monotherapy and this drug has now been evaluated as both monotherapy and in combination with other anti-cancer agents in over 300 cancer pts. A phase 1b study evaluating use of ARQ 197 in pts with HCC and cirrhosis revealed no worsening of liver function and preliminary evidence of both safety and efficacy.

Methods: Pts are currently being enrolled into this global, randomized, double blind, placebo-controlled phase 2 clinical trial. Eligible pts must present with ECOG performance score $\leq$2, and have progressed to or not tolerated one prior line of systemic chemotherapy. Pts cannot present with Child-Pugh B-C cirrhotic status. Pts are being randomized in a 2:1 fashion to receive either 360 mg. oral ARQ 197 twice daily (bid) (A) or placebo (P) and are evaluated by CT or MRI scan at regular six-week intervals. Pts randomized to P are eligible for crossover to open label A following radiographic progression of disease (PD). The primary endpoint is time-to-tumor progression (TTP). Secondary objectives (or endpoints) include comparisons of the study arms for median progression-free survival (PFS), overall survival (OS), biomarker analyses, pharmacokinetics, and safety. Treatment continues until confirmed PD or unacceptable toxicity. As of 31 December 2009, 8 out of 99 required pts were enrolled and treated. Participating centers are located in Italy (8), Germany (5), Spain (5), Belgium (3), Canada (2) and the United States (2). This trial is expected to complete enrollment by the fall of 2010.

Giovanni Abbadessa

Serves at ArQule as Medical Director.

Served at Ziopharm Oncology as Medical Director first, then as Senior Medical Director. Designed trials, interacted with PIs and Opinion Leaders, gave inputs on strategies.

Designed and conducted in vitro and in vivo cancer studies, managed animal programs, mentored students at Temple University, Philadelphia, PA.

Managed 4 oncology clinical trials, phase I-II-III (patient care, data management and analysis) at the "Istituto Clinico Humanitas" in Milan, Italy.

Took a 4-year fellowship in Oncology at the "Istituto Clinico Humanitas" in Milan, Italy, after graduating in Medicine at the University "Federico II" in Naples, Italy.

Became Medical Advisor of Within3, a company developing a platform for networking among clinicians and researchers.

Founded "PrometeoNetwork", an international network for clinicians and researchers in Life Sciences and Oncology.

Founded "PIB-Professional Italians in Boston", a community of hundreds of selected Italian professionals operating in the Boston area.

Member of:
- ASCO, American Society for Clinical Oncology
- AIOM, Associazione Italiana Oncologia Medica

Giovanni Abbadessa’s Specialties:

Clinical Oncology (European boards)

Vito M. Campese, MD

Professor, Chief, Division of Nephrology/Hypertension

USC, Los Angeles, CA

President, ISSNAF

Education
Doctor of Medicine, Medicine, University of Bari, Italy, 1966
Internships
Policlinico, Bari, Italy, 1966 - 1967
Residencies
Policlinico, Bari, Italy, 1967 - 1969
Fellowships
University of Bari - Nephrology, 1971 - 1973
University of Southern California - Hypertension Service, 1974 - 1975
Board Certification
American Board of Internal Medicine, 1980
American Board of Internal Medicine, Nephrology, 1982
Professional Society Memberships
American Society of Nephrology
International Society of Nephrology
American Society Hypertension
International Society Of Hypertension
Clinical Interests
Nephrology, Hypertension, Hypotension, Transfusion free

Gravitational Astronomy

Abstract

In the last 20 years a new kind of Astronomy has been developed around the world: it is the Gravitational Astronomy. As its name suggests, it is based on the detection of the gravity force signals that some objects in the Universe emit. These signals are emitted during the formation of neutron stars or black holes or when these objects collide together. Once emitted, these signals propagate across the Universe like waves, hence their name: Gravitational Waves. The search for GW has started in 1960 in the USA but Italy started to play a major role since the 70s. The description of the US and European detectors will be presented as well as the intense research activity going on in this field in the Rio Grande Valley.

GIANPIETRO CAGNOLI

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Education

Ph.D. in Physics, Università di Perugia — **Jul. 1998**
B.Sc. (*summa cum laude*) in Physics, Università di Perugia — **Nov. 1993**

Research Interests

Gravitational wave detection: thermal noise investigation in laser interferometric detectors, development of fused silica suspensions in advanced detectors, design of third generation detectors.
Materials research: mechanical losses measurements in low loss materials at room and low temperature, thermal expansion and thermal conductivity measurements, mechanical properties of dielectric coatings.

Research Experience

Assistant Professor — **Sept.2010 - present**
Physics & Astronomy Department, University of Texas at Brownsville

Associated Researcher — **Jul.2007 - present**
Istituto Nazionale di Fisica Nucleare, Sezione di Firenze, Gruppo Virgo.
Projects: CoaCh, dielectric coating characterization for advanced and third generation detectors; fused silica suspension for Advanced Virgo.

Honorary Position — **Jul.2007 - present**
IGR Group, Physics and Astronomy Department, University of Glasgow, UK.

Primo Ricercatore — **2006 - Jun.2007**
Istituto Nazionale di Fisica Nucleare, Sezione di Firenze, Gruppo Virgo.
Projects: development of a new nodal suspension for mechanical loss measurements (GeNS); cryogenic measurements of thermal conductivity on bonded silicon samples; set-up of an optical cavity for thermal expansion measurements at low temperature; coating characterization project designing; mechanical loss measurements on silicon rods.

Visiting Researcher — **Jun.2004 - Dec.2004**
Physics and Astronomy Department, Arcetri, Firenze, Italy.
Projects: mechanical loss measurements on silicon fibres.

Lecturer — **Oct.2000 - Jun.2007**
Physics and Astronomy Department, University of Glasgow, UK.
Projects: development of a CO_2 laser pulling machine for fused silica fibres; equipping of the cryogenic lab for mechanical loss measurements; coordination of the European Project STREGA on thermal noise reduction for third generation detectors; suspension design and thermal noise reduction strategy for the Advanced LIGO detector; development and installation for fused silica suspension for the GEO600 detector; investigations on the non linear thermoelastic damping.

Research Assistant — **Oct.1998 - Sep.2000**
Physics and Astronomy Department, University of Glasgow, UK.
Supervisor: Prof. James Hough, FRS

VINCENZO CAIAZZO
SVP Commercial Airplanes

Vincenzo (Enzo) Caiazzo joined Aeritalia in 1978 to work in Marketing & Sales Department. Through the years Enzo held a number of positions of increasing responsibility, while residing abroad for extended periods, granting him a role of "Global Player" in the international aeronautical community.

In 1983, he was sent to Toulouse (France) as Deputy Vice President of Contracts for GIE ATR , a consortium formed by Aeritalia and Aerospatiale for a new Turboprop Regional Aircraft. In 1988, he was named Vice President Marketing and Sales for ATR in Rome. In 1991, he relocated to Naples where he was appointed V P Marketing and Sales for Transport Aircraft Division.

After the merger of Aeritalia and Selenia (forming Alenia) in 1993, Enzo moved back to Rome to serve as Vice President for Corporate Sales in Europe. In 1994, he relocated to Australia where he became the Head of Alenia Australasia. In 1997, he moved to the United States where he served as Alenia West Coast Resident Executive to oversee Alenia's commercial activities with Boeing and McDonnell Douglas. In 2002, he accepted a position of Chief Operating Officer of Alenia Inc. (now Alenia North America, Inc.), Alenia Aeronautica's North American subsidiary.

In 2008 he was appointed SVP Commercial Airplanes USA. From 2005 to 2009 he has served as Chairman of the Board of Global Aeronautica, a joint venture between Alenia North America and Vought Aircraft based in Charleston, SC, for the new Boeing 787 Dreamliner, recently sold to Boeing. In October 2010 the Order of Palmetto , the state's highest civilian award for service, was awarded to Enzo by the Governor of the State of South Carolina Mark Sanford for his contribution in the creation of company , site selection and management of Global Aeronautica . In June 2008 the official title of "Commendatore" of the Italian Order of Merit (Ordine al merito della Repubblica Italiana) was awarded to Enzo by decree of the President of Italy for his international carrier .

Enzo was born in Pomigliano (Italy), he earned his degree in Political Science from the University of Naples and he speaks fluently English and French.

B 787 DREAMLINER : ALENIA PRESENCE IN BOEING SEATTLE

Alenia Aeronautica, a Finmeccanica Company,is one of the major partners in the 787 Dreamliner , the next-generation Boeing commercial aircraft, built with an extensive utilization of composite materials with " one piece barrel" technology, an innovative and unique production process. Alenia produces, in its plants in South of Italy, the horizontal stabilizer and two sections of the center – rear fuselage , that represents 14% of the entire airframe .

The metamorphosis of the Major aircraft manufacturers into system integrators has brought radical changes in the industry . The Partnership business model utilized by Boeing for the 787, has changed dramatically the traditional relationships in the supply chain and today's companies, like Alenia, are expected to be "vertical" partners, collaborating on all phases of the project from design to manufacture and assembly activities , mostly performed in the past programs by Boeing.

In such a new business model the integration with the "Boeing system", a central brain located in Seattle (WA) to coordinate and guide the global 787 production system, is the key factor for a successful partnership .

Since the launch of the program all Alenia activities in Seattle have been managed by "Alenia Commercial Airplanes" unit led by myself.

In 2005 and 2006 more than 200 Alenia's engineers have worked with Boeing in Seattle to define the architecture of the project and when the design team went back to Italy , a smaller Alenia team has been kept in Seattle , on a permanent basis , to ensure an effective communication and integration between Boeing in US and Alenia in Italy . In the next months the completion of the certification process , the first deliveries ,the production rump up will make the presence and the activities in Seattle of " Alenia Commercial Airplanes " essential for a complete integration in the "Boeing system" . In addition the development of the new version (787-9) will require to move back to Seattle hundred of Alenia engineers.

In 2004, seizing the opportunities of the new business model , Alenia decided to create a joint venture with Vought , company based in Texas , for the assembly of parts of the 787 fuselage made in Italy, Japan and USA. The joint venture (50/50) took the name of Global Aeronautica and North Charleston (South Carolina), after an extensive selection throughout the U.S., was chosen as the site where to build the plant.
Global Aeronautica has been the first successful attempt of doing things differently among Boeing's suppliers allowing access to production activities previously performed by Boeing . In 2008, after the costly confrontation with the unions in Seattle for the renewal of the employment contract, Boeing decided to build a new final assembly line of the 787 outside of the State of Washington. In addition, in order to better recover the delays in the development phase of the aircraft, Boeing identified in the acquisition of Global Aeronautica one of the strengths of this strategy and started an extensive activities to gain the control of the company , which was completed in December 2009 with the acquisition of Alenia's shares . Next year will be fully operational a second 787 final assembly line in Charleston that will create more than 8000 new jobs in the area.

Thanks to the initial Alenia / Finmeccanica investment , the State of South Carolina has received a unique opportunity that will forever be remembered in the history of one of the poorest states in the USA.

Since the establishment of the company to the sale to Boeing, I have been on the Board of Global Aeronautica as Chairman. In October 2010 I have been awarded the Order of Palmetto, the state's highest civilian award for service, by the Governor of the State of South Carolina Mark Sanford for my contribution in the creation of company , site selection and management of Global Aeronautica.

Vincenzo Caiazzo

Thromboelastography-Platelet Mapping (TEG-PM) and Perioperative Management of Antiplatelets Therapy

Cattano D, Kaynak EH, Altamirano A, Denktas AE, Pivalizza EG
The University Of Texas Medical School at Houston

Background: Approximately 5 % of the individuals with stent implantation will need noncardiac surgery yearly. ACC/AHA guidelines recommend withholding clopidogrel 5-7 days and aspirin 7-10 days before surgery. Thrombelastograph platelet mapping (TEG-PM™) is a whole-blood assay measuring thrombus strength (maximum amplitude (MA)) to detect platelet inhibition (%) by both aspirin (ASA) and clopidogrel in response to ADP and arachidonic acid (AA) stimulation. We aimed to evaluate the platelet inhibition before and after the surgery with the help of TEG-PM and assess the effect of surgery on platelet responsiveness.
Methods: Blood samples were collected from 22 patients (mean age: 65.6 ± 11.1, .. males) on the day of surgery and postoperatively. The MA on Kaolin-activated whole blood and the percentage platelet inhibition were recorded and analyzed.
Results: Pre and postoperative inhibitions of the platelets is shown in Table 1 in terms of ADP activation. All patients continued to be on ASA.
Conclusion: In this study the platelet inhibition decreased significantly in the clopidogrel population following surgery probably illustrating the effect of surgery in causing platelet activation. TEG-PM analysis can help in evaluating and managing the antiplatelet therapy in patients undergoing surgery. The low platelet inhibition found preoperatively in patients taking ASA and clopidogrel might mean that these patients might even be operated on without the need to stop clopidogrel therapy.

Table 1	Days off of Plavix	N	ADP % Preop Inhibition	ADP % Postop Inhibition	Significance
	0 ≤ 3 days	8	49.44 ± 17.56	31.86 ± 15.20	**p < 0.03**
	3 ≤ 7 days	8	36.31 ± 22.60	25.45 ± 8.67	**p < 0.04**
	> 7 days	6	30.91 ± 9.66	23.68 ± 18.10	p < 0.41

[1] van Kuijk JP, Flu WJ, Schouten O, Hoeks SE, Schenkeveld L, de Jaegere PP, Bax JJ, van Domburg RT, Serruys PW, Poldermans D. Timing of noncardiac surgery after coronary artery stenting with bare metal or drug-eluting stents. Am J Cardiol. 2009 Nov 1;104(9):1229-34.

[2] Chassot PG, Delabays A, Spahn DR. Perioperative antiplatelet therapy: the case for continuing therapy in patients at risk of myocardial infarction. Br J Anaesth. 2007 Sep;99(3):316-28.

[3]Hofer CK, Zollinger A, Ganter MT. Perioperative assessment of platelet function in patients under antiplatelet therapy. Expert Rev Med Devices. 2010 Sep;7(5):625-37.

CLINICAL ANESTHESIOLOGY

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New Findings Challenge Blood Thinner Mantra

Ted Agres

A small pilot study is calling into question the common practice of interrupting the administration of antiplatelet drugs in patients with coronary artery disease shortly before general surgery. The study found unexpectedly low levels of platelet inhibition in many of the 12 patients who had stopped taking aspirin and/or clopidogrel prior to general surgery.

Another analysis involving a similar cohort of patients found that perioperative stress further decreases the inhibition of platelet function in these patients. Both factors potentially increase the risk for major adverse cardiac events.

"If the surprisingly lower platelet inhibition found in our patients with short-term interruption of therapy is duplicated in large, randomized trials, careful re-evaluation of the generally accepted five- to seven-day interruption may be warranted to avoid undue risk of coronary stent thrombosis," said study leader Davide Cattano, MD, PhD, assistant professor of anesthesiology and medical director of the preoperative anesthesia clinic at the University of Texas Medical School at Houston.

"Patients do not respond equally to antiplatelet therapy, and the response is not predictable," Dr. Cattano noted. "A preoperative assessment of platelet function should be done in every patient on dual therapy, especially when the type of surgery demands suspension of the medications."

Patients diagnosed with coronary artery disease commonly receive drug-eluting stents and a regimen of antiplatelet medications such as aspirin and clopidogrel (Plavix, Bristol-Myers Squibb/Sanofi-aventis). Because the drugs increase the risk for bleeding, these patients usually are advised to discontinue their regimens for a short period before surgery.

But stopping the medications can increase a patient's risk for clotting, which is linked to heart attacks and other potentially life-threatening cardiac events. The rate of perioperative complications for these patients can reach 5%, Dr. Cattano said, and the rate of mortality can be as high as 40% to 80% for those who do experience adverse events.

TEG-PM

In May 2009, Dr. Cattano and his colleagues began a preliminary observational study to assess the ability of thrombelastograph platelet mapping (TEG-PM, Haemonetics Corp.) to detect platelet inhibition by aspirin and clopidogrel in patients scheduled for general surgery. TEG-PM is a relatively new assay that measures clot strength in whole blood. It detects platelet inhibition by clopidogrel and aspirin in response to adenosine diphosphate (ADP) and arachidonic acid (AA) stimulation, respectively.

Data were collected on 12 patients (age, 64±5.7 years) who arrived at the preoperative anesthesia clinic for evaluation or on the day of surgery (Table). The duration of antiplatelet therapy for all patients was 30.2±22.5 months. Aspirin interruption lasted 0.8±1.3 days and AA inhibition was 71±30.4%. Eleven patients had short-term interruption of clopidogrel for 1.1±1.3 days, with an ADP-mediated inhibition of 64±27.8%. "In this small, preoperative surgical patient sample, incomplete platelet inhibition assessed by TEG-PM was a surprising finding," Dr. Cattano said. "Resistance to antiplatelet therapy may be a clinically relevant problem." Dr. Cattano will report on the findings at the 20101 annual meeting of the American Society of Anesthesiologists in San Diego (abstracts A1164 and A1224). Dr. Cattano said he will provide updated results, including a finding that only 13 of 21 patients who suspended clopidogrel within three days of surgery showed adequate inhibition of platelets.

Table. Platelet Inhibition as Measured by Thrombelastograph Platelet Mapping (TEG-PM)

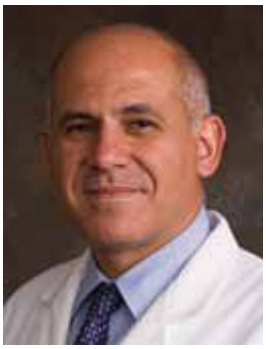
Antiplatelet Drug	Preoperative Inhibition, %	Postoperative Inhibition, %	P Value
Aspirin (AA)	43±23.9	29±24.6	<0.059
Clopidogrel (ADP)	34±16.8	23±11.9	<0.024

Marcin Wasowicz, assistant professor of anesthesiology at Toronto General Hospital, in Ontario, Canada, who is also studying antiplatelet therapy during the perioperative period (Anesth Analg 2010;111:331-338), said Dr. Cattano's results "indicate that many patients coming for noncardiac surgery after previous antiplatelet therapy have inadequate platelet inhibition. The recommended percentage of

platelet inhibition is 50% to 80%, and many patients studied [by the Texas group] presented with significantly lower inhibition."

Biography

Davide Cattano, M.D., Ph.D. was born in Italy July 30, 1974. He graduated from the prestigious medical school, Universita Campus Bio Medico of Rome, Rome, Italy July 21, 1999 Magna Cum Laude. He completed his Human Anatomy Internship at the same school and did another Internship on Internal Medicine and Clinical Epidemiology. Dr. Cattano's Internship was in Anesthesiology which he completed in 1999. Additionally, he performed an elective internship in 2002 in the Basic Science-Anesthetic Pharmacology Foundations. From 1999 – 2003, he was in the Anesthesiology Intensive Care-Critical Care Residency Program at the Medical School University of Pisa, Pisa, Italy, graduating Magna Cum Laude 10/03/2003. Dr. Davide Cattano obtained his Ph.D. in Morphology and Physiology and Pathophysiology of Cells and Tissues October 9, 2007 in the Department of Human Morphology and Applied Biology, Medical School of Medicine, University of Pisa, Pisa, Italy. Dr. Cattano has been an Assistant Professor in the Department of Anesthesiology at The University of Texas Medical School at Houston, Houston, Texas since July, 2008. Currently he is performing research on platelet work: PI on the study, "Safety Implications of Patients Receiving Preoperative Antiplatelet Therapy With Clopidgrel and/or Aspirin: Investigation of Thrombelastograph Platelet Mapping to Objectively Assess Platelet Inhibition and Subsequent Use to Guide Individual Patient Management" and Co-PI on "Perioperative Management of Antiplatelet Therapy (Clopidogrel); Retrospective Chart Review". Additionally he has published platelet work:



Luca Cicalese, M.D., FACS

Transplant Expert

Contacts

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Luca Cicalese, M.D., FACS

Transplant Expert

Position

Professor of Surgery

John Sealy Distinguished Chair and Director of the Texas Transplant Center

Director of Hepatobiliary Service

Expertise / Area(s) of Interest

Tolerance induction

Preservation and ischemia reperfusion injury

Liver and intestinal transplantation

Stem cell and organ regeneration

Hepatocellular carcinoma

Cellular transplantation

Recent Media / Articles

Elias G, Rastellini C, Nsier H, Nazarey P, Brown M, Pahari M, Shick L, Kim D, Cicalese L. Successful long-term repair of hepatic artery pseudoaneurysm following liver transplantation with primary stent-grafting. Liver Transpl. 2007 Sep;13(9):1346-8.

Pahari MP, Brown ML, Elias G, Nseir H, Banner B, Rastellini C, Cicalese L. Development of a bioartificial new intestinal segment using an acellular matrix scaffold. Gut. 2007 Jun;56(6):885-6.

Morini S, Brown ML, Cicalese L, Elias G, Carotti S, Gaudio E, Rastellini C. Revascularization and remodeling of pancreatic islets grafted under the kidney capsule. J Anat. 2007 May;210(5):565-77.

Recent Publications

Cicalese, L. UMass Memorial Performs Small Bowel Transplant - First in Northeast. Transplant Times, June 2004.

Cicalese, L. Gift of life changes hands, daughter, mother make medical history at UMass. Telegram & Gazette, Worcester, MA Thursday, May 13, 2004.

Cicalese, L. Gift of Opportunity; Liver transplant is life-saving and life changing Telegram & Gazette, Worcester, MA Sunday April 2, 2006.

Graphene for Beyond Scaled CMOS

Luigi Colombo, Ph.D

Texas Instruments Incorporated

Dallas, TX 75243

In the past decade, the state of the art Si-based electronics has gone from devices at or above 100 nm to the realm of 30 nm and below, with a defined pathway to devices, logic and memory, of about 15 nm. In addition, as devices have scaled below a gate length of about 100nm performance per power density has not scaled, in fact it has decreased. In order to address the power issues the industry is facing as CMOS devices are scaled further, a program, Nanoelectronic Research Initiative (NRI), was created to develop new materials and devices that take advantage of new state variables with the objective of improving performance per power density. Graphene, a mono-layer of carbon atoms arranged in a honeycomb lattice, has recently been subject of considerable theoretical and experimental interest because of its unique transport properties together with exceptional chemical and physical properties. New devices taking advantage of the theoretical prediction on the existence of a Bose-Einstein condensate (BEC) in bi-layer graphene films have been proposed. However, in order to demonstrate the existence of this new device, high quality films will have to be developed and integrated with dielectrics and metal contacts.

High quality graphene can be formed by exfoliation from natural graphite with samples sizes of a few hundred square microns. Graphene can also be grown on SiC substrates by a Si evaporation process from either the Si or C surfaces, but these films are limited to SiC and are difficult to integrate on Si wafers. The successful demonstration and implementation of graphene-based device technology will require synthesis of high quality graphene large are films on substrates other than SiC or the exfoliation of graphene from graphite. The discovery of large-area and monolayer graphene growth on Cu substrates has opened many opportunities for the development of graphene-based devices including transparent conductive electrodes. Growth of graphene on Cu by chemical vapor deposition (CVD) is unlike growth on other substrates such as Ni in that a self-limited monolayer of graphite is grown by a surface mediated process. In order to take full advantage of the fundamental properties of graphene

and the synthesis of large area films it is necessary to grow uniform and nearly defect-free films as the semiconductor industry has done with silicon substrates.

The objective of this presentation is to present an overview of the Nanoelectronics Research Initiative and nanotechnology as it is applied to the electronics industry.

Biography

Dr. Luigi Colombo is a Texas Instruments Fellow currently working on the Nanoelectronic Research Initiative (NRI) program collaborating with researchers at the Universities of Texas at Austin and at Dallas. Up until 2007 Luigi was responsible for the development of the 45nm gate stack using SiON/poly Si and high-k/metal gate electrodes. He is a leading expert infrared materials single crystal growth, high-k gate dielectric/metal gate materials growth and characterization, integration of materials in CMOS devices, and graphene synthesis and integration. Dr. Colombo joined Texas Instruments in 1982 after getting his PhD in Materials Science from the University of Rochester. He is the holder of over 89 US and international patents, author and coauthor of over 120 refereed publications, 3 book chapters, over 50 invited presentations and over 95 contributed presentations.

BioClonetics Immunotherapeutics

Antibody Discoveries for Human and Veterinary Immunotherapeutics Directed Against Infectious Disease and Pathogens

BioClonetics Immunotherapeutics, Inc. is a privately held Texas corporation, whose flagship antibody product—designated Clone 3—is directed against the HIV/AIDS pandemic. First discovered and patented in 1989 by Joseph Cotropia, MD, this fully human broadly *neutralizing* monoclonal antibody has demonstrated the capacity to successfully *neutralize* the HIV virus *in vitro.* Active immunization studies conducted by the National Institute of Health (NIH) in primate preclinical trials have demonstrated the Clone 3 immunogen's ability to be a necessary component of a protective *active* vaccine that will provide the basis for *sterile immunity* against HIV exposure. Data from the U.S. Governments' National Laboratory at Los Alamos, NM, identifying the amino acid sequence of known HIV isolates, predicts that Clone 3 can be 98% effective against the 2,229 HIV primary isolates known to exist throughout the world. No other product whose immunizing performance has been reported in recent vaccine trials in thirty years of HIV/AIDS research can equal Clone 3's performance and immunological capacity. In addition, six international independent *in vivo* clinical-correlate studies have provided evidence to validate the global capacity of Dr. Cotropia's Clone 3 fully human *neutralizing* antibody discovery directed against HIV/AIDS.

Biologics and antibody immunotherapeutics—effectively directed against infectious disease, cancer, bacterial and viral pathogens—have burgeoned into one of the most promising and lucrative markets of the pharmaceutical industry. Proprietary research methodologies in the discovery of specific *neutralizing monoclonal antibodies (nmAbs)* are the cornerstone of this stable pipeline (for developing biologics and designing active vaccines) that is a specialty of BioClonetics Immunotherapeutics, Inc. These products are considered the "mainstay of basic bioscience research and development" according to *The Scientist* (2005). NmAbs are essential diagnostic and therapeutic tools in clinical medicine for both veterinary and human medical applications. According to the *Theta Reports* as reported in *The Scientist*, the antibody biologics market at the close of 2004 was $34 Billion USD and is expected to double in value by 2014.

The proprietary and trade secret methodologies developed at BioClonetics Immunotherapeutics for its comprehensive and commercial antibody-based immunotherapeutic technologies platform have broad application in treating pathogenic-based cancers, infectious disease and bacterial illness. The large pharmaceutical interests have dismissed these immunologic markets, labeling them insignificant or unimportant. BioClonetics Immunotherapeutics intention is to change the paradigm in how infections are addressed in the future in both human and veterinary health medical applications. The animal kingdom as well is currently undergoing several serious global pandemics that unless addressed in a responsible manner with the unequivocal support of international interests, will have irreversible effects for future generations.

Biography

Dr. Cotropia has been in private practice and clinical research for over 35 years. During the course of his professional training he has been a research fellow at the Food and Drug Administration (FDA) in Washington, DC, a staff physician at University of Pennsylvania in Philadelphia and the Founder and President of BioClonetics Immunotherapeutics, Inc. A handful of gifted medical and molecular research professionals have joined him due to his unique capacity for medical discovery.

HOW TO SOLVE THE PROBLEM OF CANCER AND REDUCE ITS ECONOMICAL BURDEN: fund only research projects with real potential to reduce premature cancer deaths

Dario Crosetto, Frank Guy

Abstract: *To achieve as soon as possible the goal of maximizing the reduction in premature cancer deaths while minimizing the cost per life saved, and, at the same time keeping the door open to progress through the development of basic research (long-term development) it is necessary for every researcher who submits a cancer research project (and each DECISION MAKER who plans a service related to cancer) to provide an estimate, supported by scientific arguments, of the percentage of reduction of premature cancer death and a fair estimate of the percentage of reduction in cost for each life saved that their project should attain .*

DARIO B. CROSETTO
(www.crosettofoundation.org)
BIOGRAPHY

Dario Crosetto has twenty-five years' experience in international collaboration in the field of high energy physics. He has participated on research teams and presented numerous seminars and articles at conferences at universities and at the most prestigious research laboratories in several countries: CERN (European Center for Particle Physics) Geneva, Switzerland; the Superconducting Super Collier (SSC), Texas, FERMILAB, BNL, SLAC, NEVIS Columbia University, BERKLEY, USA; DESY, University of Heidelberg, Germany; SACLAY, CPPM, France; KEK, Japan, etc. He lectured at CERN School of Computing. He has published several books and articles and owns a number of patents. He has spent most of the past twenty years designing and improving apparatuses to detect high-energy particles and during the last years designing, simulating, building and testing components for his cancer screening machine Threedimensional Complete Body Screening (3D-CBS). Crosetto overseeing the design, construction, and financing of the cancer screening machine. Among the over 100 articles he published, the basis of his innovations is described in the peer-reviewed Elsevier Journal Nuclear Instruments and Methods in Physics Research, NIM (Vol. 436, pp. 341-385, 1999).

In 1992 the author, in one month, presented his innovation at three international conferences in Europe at Annecy, France [Computing in High Energy Physics '92. Annecy, France. 21-25 September 1992. CERN-92-07. pp. 803-806.], in the United States at Corpus Christi, Texas [Calorimetry in High Energy Physics. Corpus Christy, Texas, September 29 – October 2, 1992. World Scientific. pp. 553-566] and IEEE-NSS-MIC in Orlando, Florida [SSCL-Preprint-164, IEEE, Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC), Orlando, Florida, October 25-31. 1992] and two of his articles were published in the peer reviewed scientific journal *Nuclear Instruments and Methods in Physics Research (NIM)* [NIM A311:49-56,1992 and NIM A315, (1992), 487-490], while the following year he passed a major international scientific review on December 14, 1993 at FERMIlab and emeritus scientists in the field wrote letters of recognition (see testimonials at www.crosettofoundation.org/uploads/167.pdf). His innovation was recognized valuable and adopted by large collaborations of hundreds of scientists (GEM at SSC in 1993 and LHCb at CERN in 1995) and was included in their respective Technical Design Reports [15, 18].

Rational Design of Multifunctional Nanoconstructs for Biomedical Imaging and Ablation Therapy

Paolo Decuzzi, Ph.D.
Dept. of Nanomedicine and Biomedical Engineering
The Methodist Hospital Research Institute – Houston (TX - USA)

Abstract

Nanoconstructs are multifunctional particle-based devices for the 'smart' delivery of agents for biomedical imaging and thermal ablation therapy. The objective of this lecture is twofold: i) describe an integrated approach for the rational design of particle-based systems intended to target specifically and with high efficiency the diseased vasculature, whilst minimizing the non-specific uptake in organs of the reticulo-endothelial system; ii) present a new class of multifunctional nanoconstructs providing superior T1 contrast enhancement for MR imaging and thermal ablation capabilities under non invasive ElectroMagnetic fields.

The rational design of nanoconstructs is based on an integrative approach where the mathematical modeling of the vascular transport and adhesion of blood-borne nanoparticles is combined with in-vitro assays in parallel plate flow chamber systems and in-vivo characterization in small animals. The multifunctional nanoconstructs are based on nanoporous silicon particles, exhibiting a variety of size and shape combinations, loaded with different families of Gd-based contrast agents, namely the commercially available Magnevist®; Gd-nanotubes and Gd-fullerenes. These nanoconstructs can also generate significant thermal toxicity inducing cell death and/or apoptosis in the presence of external alternating electrical and magnetic fields operated in different frequency regimes.

Short Bio

Paolo Decuzzi is a Senior Scientist/Professor of Biomedical and Mechanical Engineering at The Methodist Hospital Research Institute. Dr. Decuzzi earned his M.S. degree in Mechanical Engineering from the Politecnico of Bari (IT) in 1997 and his Ph.D. degree in Mechanical Engineering from the University of Naples – Federico II (IT) in 2000. He has been visiting fellow and faculty in several Academic and Research Institutions including The University of Michigan – Ann Arbor (MI); the Princeton Material Institute – Princeton (NJ); the Leibniz Institute for New Materials in Saarbrücken (D). Dr. Decuzzi has published more than 100 papers in international peer-reviewed journals, international conferences and book chapters; and holds 5 US Patent Office applications in the field of nanoparticle-based biotechnology. He chairs the NanoCouncil of the American Society for Mechanical Engineers (ASME) and his research activity is primarily supported through the NIH and DoD in USA, and the ESF in EU.

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EDUCATION:

- Ph. D (2000) **STATE UNIVERSITY OF NEW YORK AT BUFFALO**
  Faculty of Arts and Letters
  Department of Classics
  Dissertation Title: " Apostrophe, Irony and Death in Lucan's *Bellum Civile.*"
  Dissertation Director: Martha Malamud.
  Special field: Women's studies.
  Comprehensive Exams: Spring 1998
- M.A. (1997) **Special Field: Greek Litrature**
  Advisor: John Peradotto
  Cumulative GPA: 3.9
- Undergraduate Studies (1988-1991) **UNIVERSITÀ DEGLI STUDI DI ROMA "LA SAPIENZA"**
  Faculty of Letters and Philosophy
  Department of Ancient History, Anthropology and History of Art
- Maturità **LICEO CLASSICO "DANTE ALIGHIERI"**
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FIELD WORK:

- Research Project "Statonia" sponsored by SUNY Buffalo, Università di Siena, and the American Academy of Rome, 1998 and 1999.
- Research Project "Agro Falisco" sponsored by SUNY Buffalo and the American Academy of Rome, 1997.
- Excavation Campaign 1991 at the Etruscan site of Pyrgi (Italy).
- Excavation Campaign 1990 at the temple of the *Magna Mater,* South-West area of the Palatine in Rome.
- 1989: Archaeological Survey of an *insula*in the North-West area of Ostia (Rome).
- Excavation Campaign 1988 at the temple of the *MagnaMater,* South-West area of the Palatine in Rome.

SEX DIFFERENCES IN NUCLEAR RECEPTOR ACTIONS

Chiara Gabbi, MD

Karolinska Institutet, Department of Biosciences and Nutrition, Stockholm, Sweden; University of Houston, Department of Biology and Biochemistry, Center for Nuclear Receptors and Cell Signaling, Houston, Texas, USA

Nuclear receptors are transcription factors that act as intracellular sensors for small biologically active molecules such as lipids or steroid hormones. After activation, these receptors directly regulate the expression of specific target genes by binding to known DNA sequences in the enhancer and/or promoter of the regulated genes.

Through the action of nuclear receptors, not only hormones (estrogens, androgens, thyroid hormones..), may control expression of genes but also dietary compounds like derivates of cholesterol, phytoestrogens, plant steroids or vitamins, may have a direct effect on gene transcription.

Sex differences are crucial in nuclear receptor action not only for the steroid hormone receptors but, surprisingly, also for receptors like the Liver X Receptor (LXR), an intracellular sensor for oxygenated metabolites of cholesterol.

Specific transgenic animal models, in which the β isoform of LXR has been inactivated, have shown an impressive sex difference with reference to phenotype. Only male LXRβ-/- mice from the age of 7 months develop a syndrome like amyotrophic lateral sclerosis due to an accumulation of cholesterol in the motor neurons of the spinal cord leading to their death. In addition, only female LXRβ-/- mice demonstrate, already at young age, preneoplastic lesions of the gallbladder that develop into invasive cancer with aging. Interestingly, the elimination of estrogens with ovariectomy completely prevents the development of cancer in LXRβ-/- mice.

These data indicate that LXR, the receptor for derivates of cholesterol, in a complex interplay with estrogens could have a critical role in the pathogenesis of sex-related diseases.

Chiara Gabbi, M.D.
Specialisation in Internal Medicine, University of Modena and Reggio Emilia, Italy
Licentiate Degree in Medical Science, Karolinska Instituitet, Sweden, 2008

Short description of my research field

Liver X Receptors, LXRα and LXRβ, are nuclear receptors belonging to the large family of ligand-activated transcription factors. Oxysterols, derivates of cholesterol are ligands for LXRs. Studies on knockout animals have shown different and specific roles for these receptors: while LXRα mainly protects our body from cholesterol accumulation, LXRβ seems to be involved in the pathogenesis of diseases like amyotrophic lateral sclerosis and chronic pancreatitis. The aims of my studies are to understand the physiopathological function of LXRβ using transgenic animals and then to elucidate the role of this nuclear receptor in human diseases.

Selected Publications

Gabbi C, Warner M, Gustafsson JÅ. Liver X Receptor β: Emerging Roles in Physiology and Diseases. Mol Endocrinol. 2009 Feb;23(2):129-36

Gabbi C, Kim HJ, Hultenby K, Bouton D, Toresson G, Warner M, Gustafsson JÅ. Pancreatic exocrine insufficiency in LXRβ-/- mice is due to a reduction in aquaporin-1 expression. PNAS, 2008; Sep 30;105(39):15052-7

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Gabbi C, Carubbi F, Losi L, Loria P, Costanzini M, Bertolotti M, Carulli N. Non-alcoholic fatty liver disease induced by leuprorelin acetate. Jou Clin Gastro 2008;42(1):107-110

Bertolotti M, Gabbi C, Anzivino C, Carulli L, Carulli N. Changes in Bile Acid Synthesis in Gallstone Diseases: Cause, Consequence, or Neither?. Hepatology 2007;46:1664

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Temple's **Sbarro Institute for Cancer Research and Molecular Medicine**, part of the Sbarro Health Research Organization (SHRO), is home to state-of-the-art research into cures for cancer, cardiovascular and other diseases through the identification of their underlying molecular mechanisms. Institute director and president of the SHRO Antonio Giordano and colleagues perform research devoted to understanding the molecular and cellular workings of cancer and cardiovascular disease, the connection between obesity and cancer, and molecular therapeutics. Visit the Sbarro Health Research Organization website for more information.

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Mercogliano (AV), Italy

Biography

Antonio Giordano (born October 11, 1962), is an Italian-American molecular biologist, best known as the discoverer of Rb2/p130, a tumor suppressor gene. Giordano is the President and Founder of the Sbarro Health Research Organization, which conducts research to diagnose, treat and cure cancer, cardiovascular disease, diabetes and other chronic illnesses. He is a Professor of Molecular Biology at Temple University in Philadelphia and a 'Chiara fama' Professor in the Department of Pathology & Oncology at the University of Siena, in Siena, Italy. He is also the Director of the Sbarro Institute for Cancer Research and Molecular Medicine and the Center for Biotechnology at Temple's College of Science & Technology. He is a founder and Chairman of the Scientific Advisory Board of the Human Health Foundation Onlus (HHF), an Italian charity for basic medical research supported by the Banca Popolare di Spoleto, located in Terni, Umbria. He also serves as President of the Scientific Advisory Board of the Centro di Ricerche Oncologiche di Mercogliano (CROM), Mercogliano, Italy.

Giordano was born in Naples, Italy, on October 11, 1962. He received his medical degree from the University of Naples, Italy, and his doctorate in Pathology from the University of Trieste Medical School. He was a post-doctoral fellow in the Department of Microbiology and Immunology at the New York Medical College in Valhalla, New York and at Cold Spring Harbor Laboratory (CHSL) in Cold Spring, New York, where he studied under Nobel Laureate James Watson.

Discoveries

At 26, while a post-doctoral fellow at Cold Spring Harbor Laboratory in New York, Giordano made significant contributions to the field of cancer research. His work led to the recognition that an identical protein species occurs in complexes with both a virus and with the cell cycle regulatory kinase cdc2. Later, this protein species was identified as protein cyclin A, a substance that regulates growth in the cell cycle. This work helped set the stage for subsequent discovery in several other laboratories. Giordano went on to discover Rb2/p130 in the early 1990s while serving as a member of Temple's School of Medicine faculty and as a researcher at the Fels Institute for Cancer Research and Molecular Biology. Since that time, Giordano and SHRO researchers have established links between Rb2/p130 and its expression with the regression of cancer in the lungs, the aggression of cancer in the liver and ovaries, the effectiveness of drug therapies against breast cancer, and as a potential prognosticator of prostate cancer. Giordano also discovered Cdk9 and Cdk10, genetic substances that must be activated to guarantee proper progression through the cell cycle. Research has subsequently shown that Cdk9 is a

multifunctional protein that plays a critical role in cell differentiation, particularly in muscles, HIV transcription, and the inception of tumors. Recent research has focused on the role of Cdk9-55 in helping to regenerate muscle tissue in cases of muscle wasting from disease or aging. In 2004, Giordano discovered [Novel Structure Proteins (NSPs)], a new family of structure proteins with a possible role in nuclear dynamics during cell division. One form of the gene, the isoform [NSP5a3a], is highly expressed in some tumor cell lines and could be very useful as a tumor marker. A protein isoform is a version of a protein with only small differences to another isoform of the same protein.

An International Model

In 1993, Giordano founded the Sbarro Institute with a donation from Mario Sbarro, founder of the Sbarro restaurant chain, following Dr. Giordano's discovery of the tumor suppressor gene pRb2/p130. Initially named the Sbarro Institute, the research center was located at Thomas Jefferson University, where Giordano was a professor.

When Giordano moved to Temple University in 2002, he and twenty fellow scientists forged a new, three-year alliance with Temple University in Philadelphia, Pennsylvania. Under the new arrangement, the original Sbarro Institute was renamed the Sbarro Health Research Organization, Inc. , which includes the Sbarro Institute for Cancer Research and Molecular Medicine. SHRO funds a program in the University of Siena.

In 2006, Giordano founded the Human Health Foundation (HHF) with the Banca Popolare di Spoleto. The charitable organization raises funds to support biomedical research and health education in Italy.

Patents and Publications

Since 1992, Giordano has been awarded twelve patents, with eight patents pending. He has published over 350 papers on his work in the fields of cell cycle, gene therapy and the genetics of cancer. He serves on the editorial boards of a number of professional journals including *Cancer Therapy, Current Cancer Therapy Reviews, International Journal of Oncology, The Open Cancer Journal*, and *The Women's Oncology Review* (Editor-USA). His work is funded by National Institutes of Health (NIH) grants, as well as individual and program project grants from SHRO. He is most recently co-editor of a major oncology textbook entitled, *Molecular Pathology of Gynecologic Cancer (Current Clinical Oncology)* (Humana) published in 2007.

Sbarro Health Research Organization (SHRO)

Giuseppe Russo[a], Flavio Rizzolio[a], Raffaele La Montagna[a] and Antonio Giordano[a]
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The Sbarro Health Research Organization, Inc. is an organization dedicated to elucidating the molecular basis of different human diseases. The President of SHRO, Antonio Giordano, M.D., Ph.D., and his colleagues have devoted their studies to understanding the molecular and cellular alterations involved in cancer, obesity and cardiovascular disease, with the goal of identifying new therapeutic targets.
Cancer Systems Biology and eHealth programs focus on: (1) collection of large sets of experimental data from different OMICS platforms to better understand the dynamic behavior and regulation of integrated intra- and intercellular biomolecular networks deregulated in cancer; (2) the intersection of medical informatics, public health, communication and eLearning/education, with the goal of improving health care through the latest information and communication technology.
Animal models program. This program utilizes a genetic mouse approach to clarify the function of different genes involved in cancer, developing new transgenic animals for better human cancer models and to test new compounds as potential therapeutic applications.
Drug Development program. The aim of this program is to design new pharmacological compounds able to modulate the activity of proteins with fundamental functions in cancer initiation and progression. Cutting-edge technology such as small molecule compounds and peptide derivatives has been used as lead compounds to create new molecules with high specificity and pharmacological activity.
Other programs are: Gene therapy, Obesity and Cancer, Epigenetics and Genetics, Hormone Signaling, Developmental Biology, Stem Cells, Hepatitis and Liver Cancer.

Giuseppe Russo, PhD was born in Naples, Italy. Dr. Russo is Research Assistant Professor and Director of the Cancer Systems Biology and eHEALTH Programs. Dr. Russo's research focuses on understanding the role and the molecular mechanisms of microRNAs in human cells leading to cancer pathogenesis and development, as well as work in Cancer Systems Biology and Bioinformatics.
Flavio Rizzolio was born in Sanremo, Italy. He graduated in Biology from the University of Pavia, Institute of Molecular Genetic (IGM)-CNR. His thesis project was focused on studying the genetic mechanisms of Premature Ovarian Failure. In 2010 he obtained his PhD degree in Oncology and Genetics from the University of Siena, Italy. Currently, he is a postdoctoral fellow at SHRO where he contributes to developing the new animal program as a model for human cancer.
Raffaele La Montagna was born in Naples, Italy. He graduated in Pharmacy and Industrial Pharmacy from the University Federico II, Naples; his thesis project was conducted at the Department of Pharmaceutical and Toxicological Chemistry. Since 2007, he has been a PhD student in Oncology and Genetics, working at Temple University in Philadelphia where he is active in the synthesis and development of new pharmacological compounds in cancer disease.

Dr. Dario Marchetti
Professor and Director of the CTC Core
Baylor College of Medicine, Houston, Texas

"MicroRNA-1258 Suppresses Breast Cancer Brain Metastasis by Targeting Heparanase".

Authors and Affiliatons:

Lixin Zhang[1], Peggy S. Sullivan[3], Preethi Gunaratne[4,5,6], Jerry C. Goodman[1], and **Dario Marchetti[1,2,6]** Departments of [1]Pathology and Immunology, and [2]Molecular and Cellular Biology; [3]Department of Pathology and Laboratory Medicine, University of California – Los Angeles, CA 90095; [4]Department of Biology and Biochemistry, University of Houston, Houston, TX 77204; [5]Human Genome Sequencing Center, and [6]Dan L. Duncan Cancer Center, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030.

Introduction. Mechanisms of brain metastatic breast cancer (BMBC) remain mostly unknown. Heparanase is the dominant mammalian endoglycosidase, releasing growth and angiogenic factors stored in the extracellular matrix, and regulating their potency. We have recently reported that heparanase is a downstream target of EGFR/HER2 signaling in human BMBC cells, translocates to the nucleolus following EGF treatment, and affects the activity of DNA Topoisomerase I and cell proliferation[1]. Altering heparanase activity therefore provides the opportunity to block multiple pathways which are crucial for tumor cell colonization and growth in the brain microenvironment. Several reports indicate that microRNAs affect tumor progression and are differentially expressed between normal mammalian gland and breast carcinoma tissues. However, roles of microRNAs in BMBC have not been deciphered. We hypothesized that heparanase represents a target for the development of novel therapies preventing BMBC, whose gene expression and modalities can be altered by microRNA mechanisms.
Aims and Methods. We identified microRNA-1258 (miR-1258) as microRNA that targets human heparanase by using miRanda and RNAhybrid programs, and aimed to assess its abilities to suppress BMBC by inhibiting heparanase.
Results and Conclusions. We discovered that miR-1258 levels inversely correlated with heparanase expression, activity, and metastatic propensities - lowest in highly aggressive BMBC variants, compared to either non-tumorigenic or non-metastatic mammary epithelial cells. These findings were validated by analyses of miR-1258 and heparanase content in paired clinical tissues - normal mammary gland versus ductal carcinoma, and primary breast cancer versus BMBC. Furthermore, miR-1258 directly inhibited heparanase expression and activity in BMBC cells. Importantly, stably expressed miR-1258 by lentiviral delivery significantly downregulated heparanase, inhibited BMBC cell invasion, and suppressed experimental brain metastasis by 74%. These findings introduce a new concept that links microRNA mechanisms with BMBC by a downregulation of heparanase functionality, and provide the groundwork for heparanase-based therapies in brain metastatic breast cancer.

[1] L. Zhang, P. Sullivan, J. Suyama, and D. Marchetti. Epidermal growth factor - induced heparanase nucleolar localization augments DNA Topoisomerase I activity in brain metastatic breast cancer. *Mol. Cancer Res.*: 8(2), 278-90, 2010.

Two exotic views: seascapes of the deep oceans and extraterrestrial landscapes

Daniel Minisini –Research Geologist, Shell

Few hundreds of human beings have climbed Mt. Everest, 12 astronauts have walked on the Moon, but only 2 people have reached the deepest ocean trench and no one has yet touched the surface of other planets. The study of the deep ocean floors and the untouched surfaces of planets is mainly based on images recorded in the darkness. These remote sensing tools allow the geomorphologists to interpret three-dimensional overviews of exotic landscapes, among them the seafloor of the Mediterranean (Minisini et al., 2006, 2007, 2009) and the surface of Mars.

The deep oceans hide some morphologies similar to the sub-aerial world, including landslides, canyons and dunes, also their triggers are similar. Nevertheless, some other shapes are unique to the marine environment, like broad fields of sediment waves, lobes of sandy deposits and extensive slopes plastered by mud. The geomorphologists integrate the analyses of images with a suite of data (*e.g.*, sediment samples and current velocities) to unravel the processes generating these unique shapes. In specific, the aforementioned features are generated by the interaction of the currents with the seafloor roughness, by catastrophic turbiditic events, and by steady bottom currents flowing along contour, respectively.

Today, researchers lack samples from other planets (beside meteoritic material). Therefore the well-known geomorphologies of the marine environments are used as analogs. These analogs play an important role in understanding the significance of the extraterrestrial topography and inferring the physical processes that determine those exotic landscapes. For instance, the presence of fluids flowing on the Martial surface and the presence of ancient bacterial life on Mars is inferred by the morphological studies in the ocean floors and the analyses of sediments deposited in marine environments.

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Minisini D., Asioli A., Trincardi F., Canu M., Foglini F., 2007. Morphologic variability of exposed mass-transport deposits on the eastern slope of Gela basin (Sicily Channel). Basin Research. v. 19, n.2, pp. 217-240.

Minisini D., Trincardi F., Asioli A., 2006. Evidence of slope instability in the Southwestern Adriatic Margin. Natural Hazards and Earth System Sciences, v. 6, n.1, pp. 1-20.

Short biography:

Daniel is a research geologist, his expertise includes stratigraphy, sedimentology and geomorphology. Daniel studied Earth Sciences at the University of Bologna, where he also obtained his Phd analyzing the triggers and the effects of submarine landslides. He visited and collaborated with the National Oceanographic Center Southampton (UK), the University of Barcelona (Spain), the University of California (Santa Cruz) and the Bureau of Economic Geology (Austin). He worked on several EU-funded projects at the Institute of Marine Sciences at the CNR (National Research Council) where he participated to 15 scientific cruises on research vessels. Daniel joined eni e&p (Milan) in 2006 and was involve in research and development projects on deep water depositional settings in the Mediterranean, Gulf of Mexico and the Indian Ocean. In eni, he taught courses on seismic geomorphology and collaborated with research institutes (i.e., GeoScience Azur-CNRS, Nice; Univ. of Austin, Texas; Univ of Stanford, California). In 2009, Daniel moved to Houston and joined the Technological Center of Shell. Here, he dedicates his studies to the comprehension of the depositional processes of muds in submarine environments whose implications are important to the production of gas from deeply buried shales.

During the last 4 years Daniel published 8 articles in international scientific journals, collaborated to the publication of an Italian cartographic map of the Adriatic Sea, presented 8 contributions in geologic conferences and chaired a session, peer-reviewed 5 articles and dedicated 9 spreading lectures in universities and local communities.

Salvatore Napolitano; Abstract

Pietro Vivenzio: Natural Philosophy, Collecting, and Strategies of Self-promotion in Naples between the Eighteenth and Nineteenth Centuries

During the eighteenth and nineteenth centuries (1750-1850), the South of Italy experienced one of the most dynamic periods of its history. The continuous political upheavals produced constant changes in the cultural direction as well, particularly in the capital of Naples. Grounded in a global cultural history approach, this article investigates this particular moment in its multiple aspects: the cultural movements, the artistic directions, the collection preferences, and the aesthetic and philosophical speculations of the time.

Concurrent with this multifaced approach, we hope to demonstrate that the Neapolitan collector Pietro Vivenzio‟s experience provides an important paradigm for the interpretation of this peculiar moment of Southern Italian cultural history. In fact, Pietro, along with his brother Nicola, was able to assemble one of the most celebrated collections of ancient vases in Europe, which they used to promote themselves – both culturally and socially - in the contemporary *République des Lettres.*

Particularly in the unpublished *Sepolcri Nolani,* originally solicited by Sir William Hamilton but revised after a long exile in Rome following the French domination of the Kingdom of Naples, Pietro garnered new attention for archeological evidence and techniques of excavation, profoundly influenced by new trends of *Natural Philosophy.*

Through his ardent collecting of antiquities, Pietro Vivenzio exhibited a profound personal engagement with the ancient world, which led him finally through the study of these objects to define a new history of ancient art, perfectly aligned with Winckelmann‟s and Lanzi‟s theories on connoisseurship in ancient and modern art, Vico‟s historical vision, and the new German historiography proposed by Heyne.

Biography

With a solid grounding in Cultural History, I specialize in History of Archaeology, History of Collections, and European and American Art History of the seventeenth through twentieth centuries.

I was born in Italy, on June 6th 1981, where I attended the University of Naples with a major in Art History. I graduated *summa cum laude* from the Università degli Studi di Napoli "Federico II" in July 2004. The title of my thesis was *The Débâte on Antiques between Florence and Naples during the Eighteenth Century.*

In 2006 I received my MA in European Cultural Heritage between Italy and Greece, and on January 19th 2010 I defended, with distinction, my PhD dissertation: *«les faits», «la comparaison», «la vérité». A critical edition of Pietro Vivenzio's unpublished 'Sepolcri Nolani'. A guide to understanding Antiques, Historiography and Art History in Naples between the Eighteenth and Nineteenth centuries.* I conducted the research leading to the writing of my dissertation both in Italy, the U.S., and France.
I received awards from some of the best qualified and most prestigious Italian, European, and American academic research centers, and currently I'm a Mellon Postdoctoral Instructor in Art History, Cultural Studies, and History of Science at the California Institute of Technology, Pasadena, California.

Before coming to Caltech, I taught courses in Modern and Contemporary European Art History, Cultural History and History of Collections, and Languages and Literatures (Latin and Greek) at the University of Naples, University of Rome, and University of Teramo.

I also was a visiting professor, or invited for symposia or lectures, by the Institut National d'Histoire de l'Art, Paris; Université de Lille 3, France; University of Malta, MSD; University of Warsaw, Poland; Accademia Pontaniana, Rome; Consiglio Nazionale delle Ricerche, Rome; Scuola Normale Superiore, Pisa; Kunsthistorische Institut, Florence; Istituto Italiano per gli Studi Storici "Benedetto Croce," Naples; Istituto Italiano per gli Studi Neoclassici "Antonio Canova," Vicenza; Istituto Nazionale di Studi Etruschi ed Italici of Florence; Istituto Italiano di Cultura, Barcellona (Spain); and Casa degli Italiani and Istituto Italiano di Cultura, Madrid (Spain).

In 2005, I published *L'Antiquaria settecentesca tra Napoli e Firenze. Felice Maria Mastrilli e Gianstefano Remondini,* (Firenze, Edifir, 2005. Preface by Claire Luoise Lyons) in a book series entitled *Museologia e Museografia,* directed by Antonio Paolucci and Cristina de Benedictis.

In addition to this book, I have also published various essays and articles in many national and international journals, such as Annali dell'Istituto Italiano per gli Studi Storici "Benedetto Croce," Annali dell'Istituto Nazionale di Studi Etruschi ed Italici, Annali di Critica d'Arte, Napoli Nobilissima, "Oebalus" Rivista di Studi sulla Campania nell'Antichità.

Currently in press is my new monograph, based partially on revision of my Ph.D. thesis, '*Sepolcri Nolani' di Pietro Vivenzio, introduction and notes by Salvatore Napolitano*, which will be published in *Testi,* a book series of the Istituto Italiano per gli Studi Storici, Bologna, Il Mulino. In that work, based almost exclusively on unpublished material (manuscripts and works of art) and the evaluation of intercultural influences in different locations of Europe at the same time, I suggest a new methodological approach and an innovative interpretation of the arts, historiography, and theory and philosophy of art in eighteenth and nineteenth century Southern cultural history.

In my research, I explore the relation between visual evidence and written texts, mythological images and their contexts, the role of monuments and pictorial arts in the transmission of cultural memory and identity, the reception of classical past in modern scholarship, and more generally, the Cult of Antiquity and artistic production in Italy and in France between the eighteenth and nineteenth centuries. My approach targets the study of intercultural influences and the value of cross-cultural comparisons, based upon completely unpublished documentation.

My current research plans include the study and reconstruction of many biographies and cultural itineraries of single personalities working in the fields of Art, Architecture, Aesthetics, Historiography, and Erudition in general in the south of Italy between the seventeenth and nineteenth centuries. I want to focus on the period between the crowning of Charles of Bourbon, the King of the Two Sicilies (1734) and the death of his son Ferdinando (1825). I intend to publish this research in book format in 2012; the title is *The "Truth" and the "Antique"*: *Baroque Survival, the Cult of Antiquity, and Neo-classical Aesthetics during the Bourbon Reign.*

PUBLICATIONS

Books

The "Truth" and the "Antique". Baroque Survival, the Cult of Antiquity and Neoclassical Aesthetics in Naples between 18th and 19$^{th.}$. An interpretative line; manuscript in preparation.

La Storia e le Arti nella visione e nel metodo di Edward Gibbon; manuscript in preparation.

S. Napolitano, *L'antiquaria settecentesca tra Napoli e Firenze. Felice Maria Mastrilli e Gianstefano Remondini*, (Preface of Claire Louise Lyons), Firenze, Edifir, 2005.

Salvatore Napolitano ed., *Scambi e confronti, sui modi dell'arte e della cultura, tra Italia e Polonia. Esperienze significative ed occasioni di riflessione*, Atti del convegno internazionale di studi (Warsaw 5 marzo/Nola 25-26 giugno 2010), ed. Larcaelarco edizioni, series *Conferenze,* Napoli 2010.

S. Napolitano ed.,*"Sepolcri Nolani" di Pietro Vivenzio*, with and introduction and notes by S. Napolitano, series *Testi*, Istituto Italiano per gli Studi Storici "Benedetto Croce", Bologna, Il Mulino [in press].

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Software Development and Product Performances

Ing. Paolo Papi
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Abstract

In the last few years there is a growing number of performance related customer issues after a product is released. Here are the key contributing factors related to the way a software product is designed and developed:

- We point our attention to performances by measuring them after the main system architecture and components have been implemented: it is too late.
- Even what should measured and how doing it is not clear.
- Fixing performance issues after the fact is a high cost activity, and the provided solutions are often only partial, as not affordable radical changes in the foundations (architecture and ground technology) would be required to really cure the problems.
- To effectively and efficiently tackle the problem we need to adopt a performance-aware approach along the entire software development cycle, allowing us setting correct expectations and evaluating design and development choices, alternatives and execution against performance objectives.

Performance must be designed in advance, to allow for adequate resources planning and change management.

- HOW:
  - Capturing all available performance requirements and goals documented for the solution.
  - Asking the right performance related assessment questions, while the high level system structure is being designed.
  - Build predictive model.
  - Validating the assessment findings with stakeholders, and feeding back input into the high level design documents for architecture and design adjustments.
- WHEN:
  - During the planning phase, to be sure that construction plan can take in account all findings.

- The performance evaluation, validation and feeding into the design documents should happen prior to signing project contract.
- Supported by a dedicated deliverable: the Performance design document.

This paper describes how to optimize the software development process to guarantee the highest focus to product performance, in order to resolve most of the customers' issues and to position the products for long term success.

Biography

Paolo Papi was born in Rome, Italy. After obtaining the 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 architectural leadership roles. In 1998 moved from Rome to Austin, TX, assuming managerial responsibilities in different organizations in the IBM Software Group. He is currently managing a project management team involved in many software development projects across the globe, and is the program director for the performance leadership team, with the mission to improve product performances across many IBM Software Group products. Paolo lives in Austin, TX, is married with Patrizia and has a 4 years old son, Piefrancesco.

Matteo Pasquali
Professor in Chemical and Biomolecular Engineering
Rice University, Houston TX

Research Interests:
Micro- and nanostructured liquids
Interfacial and biological flows
Multiscale modeling of complex flows of complex fluids
Carbon nanotubes in liquids

Education:
Laurea (1992) University of Bologna, Italy
Ph.D. (1999) University of Minnesota

My research focuses on processing flows of microstructured liquids. Micro-structured liquids are ubiquitous in the chemical, polymer processing, coating, food, and biomedical industries. Theoretical and computational modeling of flow and transport in microstructured liquids will be a very important tool to design new processes and apparatus that can produce defect-free products at high rate with minimal environmental impact.

Conventional transport laws based on classical irreversible thermodynamics fail to describe transport in liquids like polymer melts, solutions, blood, and dough. In recent years, two new approaches have appeared to model flow and transport in microstructured liquids. One method (mesoscopic) introduces field variables obeying transport equations to represent average local values of the liquid

microstructure. The other method (micro-scopic) represents the microstructure by means of a large number of micromechanical contrivances distributed in the flow volume and following stochastic differential equations. The equations of the mesoscopic models include several phenomeno-logical coefficients, whereas the microscopic models depend on few parameters that can be estimated often from knowledge of the liquid's molecular structure. Microscopic models are presently impractical for process modeling because their equations are computationally much more expensive than those of the mesoscopic models.

Another important open problem in the study of polymeric liquid flow is the experimental determination of the interaction of flow and microstructure. Conventional techniques (e.g. flow birefringence) are now being ported from rheometric flows to prototype process flows. Meanwhile, new methods like fluorescence microscopy have proven effective to study the dynamics of polymeric liquids in rheometric flows.

Modeling process flows with mesoscopic rheological theories: The current approach to computational modeling of complex flows of a polymeric liquid relies on choosing a constitutive equation for the stress based on a shear flow characterization of the liquid. The constitutive equation is then solved together with the mass and momentum transport equations. If flow predictions and measurements do not agree, another constitutive equation is selected and solved. This procedure is very labor-intensive and rarely succeeds. I am developing a set of algorithms that will automatically search the parameter space of a family of mesoscopic constitutive equations, compute flow states, compare computations and experiments, and select the constitutive equation that correctly predicts the flow of the liquid in a particular process.

Solution of microscopic transport equations in process flows: Microscopic models have not been used yet to compute free surface flows of polymer melts and solutions. A few interesting studies have recently shown that it is possible to compute simple two-dimensional flows using microscopic models (Ottinger 1996). I am interested in solving free surface flows of polymeric liquids described by microscopic models. The results of the detailed microscopic simulations can be used to improve the mesoscopic models.

Visualization of single DNA molecules in process flows:DNA molecules behave qualitatively as ordinary polymers. DNA can be marked with fluorescent stains and visualized by optical microscopy (Perkins et al. 1994) and is an attractive model system to study how macromolecules flow and deform. I have used DNA molecules to study the flow and deformation field in a roll-and-knife coating flow, and I am going to study other process flows. I am also working on improving our current image acquisition and analysis techniques to enhance image quality and determine automatically the conformation and velocity of the flowing DNA. The results of these studies clarify the interaction of polymer conformation and flow structure, and can be used to improve the theoretical models of transport in polymeric liquids.

Selected Publications

1. L. M. Ericson, H. Fan, H. Peng, V. A. Davis, W. Zhou, J. Sulpizio, Y. Wang, R. Booker, J. Vavro, C. Guthy, A. N. G. Parra-Vasquez, M. J. Kim, S. Ramesh, R. K. Saini, C. Kittrell, G. Lavin, H. Schmidt, W. W. Adams, W. E. Billups, M. Pasquali, W.-F. Hwang, R. H. Hauge, J. E. Fischer, and R. E. Smalley, Macroscopic Neat Single-Walled Carbon Nanotube Fibers. Science, 2004, accepted.
2. M. Pasquali, Swell properties and swift processing. Nature Mater., 3, p. 509-510, (2004), (Invited News & Views Article).
3. M. Bajaj, P. P. Bhat, J. R. Prakash, and M. Pasquali, Micro-Macro simulation of viscoelastic free surface flows using the Brownian configuration fields method. Proc. XIVth Int. Congr. on Rheology, Seoul, Korea, (22-27 August 2004), accepted (June 2004).
4. V. A. Davis and M. Pasquali, Macroscopic Fibers of Single-Walled Carbon Nanotubes. In Nanoengineering of Structural, Functional and Smart Materials, Eds. M. Schulz, A. Kelkar, and M. Sundaresan, CRC Press, accepted (May 2004) [invited review article].
5. D. Arora, M. Behr, and M. Pasquali, Blood Damage Measures for Ventricular Assist Device Modeling. Artificial Organs, accepted (April 2004).
6. X. Xie and M. Pasquali, A New, Convenient Way of Imposing Open-flow Boundary Conditions in Two- and Three-dimensional Viscoelastic Flows. J. Non-Newtonian Fluid Mech., accepted (February 2004).
7. M. Pasquali and L. E. Scriven, Theoretical modeling of microstructured liquids: a simple thermodynamic approach. J. Non-Newtonian Fluid Mech., 120, p. 101-135, (2004).
8. R. Duggal and M. Pasquali, Visualization of Individual DNA Molecules in a Small-scale Coating Flow. J. Rheol., 48, p. 745-764 (2004).
9. S. Ramesh, L. M. Ericson, V. A. Davis, R. K. Saini, C. Kittrell, M. Pasquali, W. E. Billups, W. W. Adams, R. H. Hauge, R. E. Smalley, Dissolution by Direct Protonation and Nematization of Pristine Single Walled Carbon Nanotubes in Superacids. J. Phys. Chem. B, 108, p. 8794-8798 (2004).

Two applications of carbon nanotubes to medicine and energy

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Single-Walled Carbon Nanotubes (SWNTs) have remarkable electrical, thermal, and mechanical properties, more so than previously known polymer molecules or colloidal particles. Realizing these properties in applications requires understanding and controlling the behavior fluid phases of nano-carbon. Biological and environmental applications are likely to require dilute phases of nano-carbon; material processing, e.g., production of coatings and fibers, will require more concentrated phases.

I will discuss work towards two applications of SWNTs. In medicine, SWNTs are being considered as potential ablating agents for cancer. Their delivery to cancer cells requires understanding of motion of SWNTs in porous media. We have studied motion of SWNTs in gels and resolved a long-standing question on the motion of threads in highly confined environments. We find that even minute flexibility promotes the rotational diffusivity of the SWNTs, and that such diffusivity is independent of the extent of confinement. In energy, SWNTs are being studied as multifunctional fibers and lightweight electrical conductors that could form a global grid needed to deploy renewable energy resources. We find that SWNTs can be dissolved at high concentration in green solvents (acids) and they can be spun into continuous fibers with interesting mechanical and electrical properties.

Classical structures smaller than Planck's constant do influence Quantum Mechanics

Luca Perotti

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It is a commonly held belief that classical structures smaller than Planck's constant cannot be "see" by quantum wave functions and therefore have no effect on their evolution in time. This is not true in general.

In particular, quantum resonances (interactions between energy levels) can often be clearly related to classical resonances (which happen when the ratio of two frequencies of the system equals the ratio of two integer numbers). When this is the case, the quantum states reproduce the underlying classical structure in phase space.

In a parameter dependent system where classical resonances are present, classical related quantum resonances are present only when the distance between two levels allows them to interact through the classical resonance itself. This distance is directly related to the size of the classical structure the classical resonance generates, but no Planck's constant related threshold has been found.

Pulsing -or sweeping through- one of the system parameters, allows quantum resonances related to small classical structures to play a relevant role in the time evolution, as substantial population transfer can happen at these interactions. In the case I studied, pulsing leads to a remarkable agreement between classical, quantum, and experimental evolution.

Studies of small classical structures could therefore be used to improve design methods for the transfer of population among quantum states in a controlled way.

Biographical Sketch

Dr. Luca Perotti
Research Professor, Texas Southern University,
3100 Cleburne Ave, Houston, Texas 77004
Researcher, Center for Nonlinear and Complex Systems,
Universitá degli studi dell’Insubria, Via Valleggio 11, Como 22100, Italy

Professional Preparation

Universitá degli studi di Milano	Physics	Laurea, February 1986.
University of Pittsburgh	Physics	Masters of Science, April 1992.
University of Pittsburgh	Physics	Doctorate of Philosophy , December 1996.
Max Planck Institut Fuer Quantenoptik	Atomic Phyics	June 1997-September 1999
Clark Atlanta University	Solid State	December 2000-November 2001

Appointments

October 2007-Present: Visiting Associate Professor, Texas Southern, Department of Physics.

1987-Present: Researcher, Center for Nonlinear and Complex Systems, Como.

December 2000-November 2001: Postdoctoral Research, Clark Atlanta University.

June 1997-September 1999: Postdoctoral Research, Max Planck Institut Fuer Quantenoptik.

September 1990-May 1995: Research Assistant, Univ. of Pittsburgh, Department of Physics.

1985-1987: Research Assistant, Universitá degli studi di Milano, Department of Physics.

Publications

L. C. Perotti "Small phase-space structures and their relevance to pulsed quantum evolution: Stepwise ionization of the excited hydrogen atom in a microwave pulse", Phys Rev. A **81**, 033407 (2010).

D. Bessis and L. Perotti "Universal analytic properties of noise: introducing the J-matrix formalism"; J. Phys. A 42 (2009) 365202 (15pp)

N. Bergomi, L. Cazzaniga, M. Giliberti, L. Perotti, G. Vegni "campi e particelle: esperienze emblematiche", in "approcci e proposte per l'insegnamento-apprendimento della fisica a livello preuniversitario", P. Guidoni and O. Levrini ed. FORUM (Udine, Italy) 2008

Luca Perotti and Daniel Bessis, "Realistic Semiconductor Heterostructures design using Inverse Scattering"; Microelectronics Journal 34 (2003)

L. C. Perotti, "Ionization of Rydberg alkali-metal atoms in quasistatic electric fields: A classical view of the n^{-5} scaling of the threshold field"; Phys. Rev. A 73, 053405 (2006).

L. C. Perotti, "Proposed Interpretation of Microwave Ionization of Rydberg Alkali-metal Atoms"; Phys. Rev. A 71, 033405 (2005)

L. C. Perotti, "Quantum double pendulum: Study of an autonomous classically chaotic quantum system"; Phys. Rev. E 70, 066218 (2004).

L. Perotti, V. Alekseev and H. Walther; "Transport of a Single Ion in an Optical Lattice: Spatial diffusion and Potential Energy"; Optics Comm. 183 (2000).

J.E. Bayfield, S.Y. Luie, L. C. Perotti and M. Skrzypkwosky; "Ionization Steps and phase space metamorphoses in the pulsed microwave ionization of highly excited hydrogen atoms"; Phys. Rev. A 53(1996).

G. Brivio, G. Casati, I. Guarneri and L. Perotti; "Quantum Suppression of Chaotic Diffusion: Theory and Experiment", Physica D 33 (1988).

Activities

While in Atlanta Dr. Perotti perfected codes which -starting from a suitable Pade' approximant of the desired transmittance- reconstructed, through inverse scattering techniques, the corresponding monodimensional effective self-consistent potential having no bound states. In collaboration with Dr. A.

Mezincescu he also wrote codes to calculate and subtract from the potential thus obtained the self-consistent field for a given density of donor dopant ions and finally –trough a change of coordinates- obtain the chemical composition profile (solution of the variable mass BenDaniel and Duke's equation). The technique allows to efficiently design semiconductor heterostructures given the desired electron reflectance.

While In Munich Dr. Perotti developed -for comparison with laboratory experiments- semiclassical and full quantum Monte Carlo simulations of an ion moving in a one-dimensional optical lattice and a weak confining static electric field while at the same time being subject to a periodic driving force. The solution of the Fokker-Planck equation for the system in the diffusion limit, found in collaboration with Dr. V. Alekseev of the Lebedev Physical Institute in Moscow, allows to explain the apparent rise of the spatial diffusion coefficient when increasing the periodic force amplitude.

In Pittsburgh Dr. Perotti conducted Classical and quantum simulations of the monodimensional hydrogen atom in a pulsed microwave field and a collinear constant static electric field, both with and without noise. Furthermore he calculated the instantaneous quantum quasienergy (Floquet) levels for the above system and the Husimi functions of the corresponding states and of the projections on those states of the pulsed wavefunction to help interpret the results of the above quantum numerical simulations. In particular he was able to show the relevance of small (as compared to ħ) classical phase space structures to pulsed quantum evolution.

In Milano he has applied similar techniques to the study of the stochastic ionisation of Alkali-metal atoms: microwave experiments with Alkali atoms are easier to perform than with Hydrogen; on the other hand, core effects cause significant deviations from the hydrogenic behaviour. For microwave frequencies close to the electron Kepler one, when quantum effects are still dominant, Dr. Perotti developed an evaluation of the ionisation threshold based on the similarities between the phase space structures of Alkali in monochromatic microwave fields and Hydrogen in a bichromatic field. He has also shown that in the regime of very low microwave frequencies (regime III of A. Buchleitner and coworkers), a classical explanation is possible in terms of Chirikov's criterion for transition to chaos.

He is currently collaborating with Marco Giliberti, from the Universitá degli studi di Milano on a study for the improvement of the teaching of modern physics to High School and College students.

Thesis and Postdoctoral Advisors

Dr. G. Casati, Laurea Thesis Advisor, Universitá degli studi di Milano

Dr. J.E. Bayfield , Ph.D. Thesis Advisor, University of Pittsburgh

Dr. H. Walther , Postdoctoral Advisor, Max Planck Institut Fuer Quantenoptik

Dr. D. Bessis, Postdoctoral Advisor, CTSPS, Clark Atlanta University

Cristiana Rastellini, M.D.
Professor

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; immunomodulation-immunosuppression; 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

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Bio-inspired camouflage and cell mediated transport of nano-systems for drug delivery

N Quattrocchi, C Chiappini, JO Martinez, X Liu, MG Kolonin, M Ferrari, & **E Tasciotti**

The inability of injected molecules and nanoparticles to successfully negotiate the biological barriers encountered upon systemic administration has greatly limited their effectiveness *in vivo* and significantly impacted their translation into the clinic. We recently developed a novel delivery system based on nanoporous silicon that decouples the tasks required to reach the target onto multiple stages. These multistage silicon particles (MSP) are biocompatible, biodegradable and designed and engineered to load and release virtually any type of existing nanoparticle. Here, we present the advantages of two novel delivery strategies able to bestow MSP with prolonged circulation, selective cancer targeting and enhanced tumor retention.

In our first strategy we disguised the MSP by coating them with cellular membranes isolated from leukocytes. We called it the Leukolike system (LS). We proved that the LS imitates the innate properties of leukocytes: RES avoidance and endothelial transmigration. In the presence of macrophages, MSP were preferentially phagocytized while LS were not sequestered. Additionally, we demonstrated that the LS could successfully reproduce transmigration across an endothelial monolayer all the while avoiding the lysosomal pathway, maintaining its structural integrity and retaining the payload through the crossing.

In our second strategy, we hid the MSP inside adipose stromal cells (ASC) capable of migrating and home to tumors after intravenous or subcutaneous injection. We called it the Trojan Horse approach. We studied MSP internalization, cytoskeletal organization and impact on ASC functions and fate. We established that ASC were capable of efficiently internalizing large numbers of MSP with minimal effects on their internal structure or overall proliferation. We quantified *in vitro* and *in vivo* their migratory potentials using fluorescent and near infrared (NIR) imaging and tracked ASC migration and homing to the tumor. Our results provide the direct evidence that by exploiting the ability of stem cells to locate and reach a tumor it is possible to overcome RES uptake and other biological barriers and specifically accumulate nanoparticles and drugs at the cancer site.

In conclusion our data proved that it is possible to camouflage a synthetic nanoparticle as a biological entity by functionalizing its surface with biological material and that this modification imparts to the nanoparticles some of the properties of the donor system. We also proved that by relying and leveraging on the innate abilities and functions of different cell types in the body we conveyed to nanoparticles the ability to escape RES, cross the endothelial barrier and target the tumor while retaining the versatility of the MSP for the loading and controlled release of multiple payloads of various nature.

The two strategies discussed here represent a radical and revolutionary change in approach compared to current research in drug delivery. We believe that by developing biology inspired solutions it will be possible to increase the specific targeting of therapeutic and diagnostic agents to the tumor with unprecedented efficiency.

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Ennio Tasciotti, PhD	**Assistant Professor- The University of Texas Health Science Center at Houston**
eRA COMMONS USER NAME (credential, e.g., agency login) **ETASCIOTTI**	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(If applicable)*	YEAR(s)	FIELD OF STUDY
University of Pisa, Italy	M.Sc.	2000	Biological Sciences
Scuola Normale Superiore Pisa, Italy	M.Sc.	2000	Molecular Biology
Scuola Normale Superiore Pisa, Italy	Ph.D.	2005	Molecular Medicine
International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy	Postdoc	2006	Molecular Imaging
University of Texas Health Science Center at Houston, Houston, Texas	Sr. Postdoc	2007	Nanomedicine

A. Positions and Honors.

Positions and Employment

1998 Visiting Scientist at the Laboratoire de Genetique Moleculaire de la Neurotransmission (L.G.N.) Paris, France
1999-2000 ICGEB Single Service Agreement. "Production and purification of recombinant proteins of HIV-1", Molecular Medicine Laboratory, Trieste, Italy
2005 Visiting Scientist at the Micro Medical Device Laboratory, Ohio State University, Columbus, Ohio
2005-2006 Postdoctoral Fellow at the Molecular Medicine Laboratory (ICGEB), Trieste, Italy
2006 Project Manager Core Facility Molecular Imaging, CBM Scrl – Consorzio per il Centro di Biomedicina Molecolare, AREA Science Park, Basovizza, Trieste, Italy
2006-2008 Postdoctoral Fellow at the NanoMedicine Laboratory, The Brown Foundation Institute of Molecular Medicine, The University of Texas Health Science Center at Houston, Houston, Texas
2008 Assistant Professor at the NanoMedicine Laboratory, The Brown Foundation Institute of Molecular Medicine, The University of Texas Health Science Center at Houston, Houston, Texas

Honors

1999 University of Pisa Foundation/ Young scientist award
2000 Molecular Biology Research Society Graduate Student Award Finalist
2000-2004 Italian Ministry for Instruction "Distinguished Scholar", Scuola Normale Superiore degli Studi di Pisa
2001-2005 EEC, Researchers Training and Mobility Program Multiple Awarded fellowships from the European Community
2006 Stipend award for best submitted abstract. Society of Molecular Imaging, Hawaii, USA
2008 Stipend award for best submitted abstract. World Conference on Molecular Imaging, Nice, France

B. Selected peer-reviewed publications (in chronological order).

1. **Tasciotti, E.**, Zoppe, M. and Giacca, M. "Transcellular transfer of active HSV-1 thymidine kinase mediated by an 11-amino-acid peptide from HIV-1 Tat", Cancer Gene Therapy, 2003, 10, 64-747.
2. De Coupade, C., Fittipaldi, A., Chagnas, V., Michel, M., Carlier, S., **Tasciotti, E.**, Darmon, A., Kearsey, J., Ravel, D., Giacca, M., Cailler, F.M. "Novel cell-penetrating peptides for specific subcellular delivery of therapeutic cargoes", Biochemical Journal, Sep. 1, 2005; 390 (Pt 2); 407-18.
3. **Tasciotti, E.** and Giacca, M. "HIV-1 Tat protein transduction domain improves thymidine kinase bystander effect for cancer gene therapy", Human Gene Therapy, Dec. 2005; 16(12): 1389-403

ISGC – January 6-8, 2011 Houston, TX

Chemoresistant Colorectal Cancer Cells Demonstrate High Glycolytic Activity and Increase HIF-1alpha Expression

Federico Tozzi[1] MD, Yunfei Zhou[1] MD PhD, Jinyu Chen[2] PhD, Fan Fan[1] BS, Ling Xia[1] MS, Jinrong Wang[2] PhD, Heather Brusher[2] PhD, Xuefeng Xia [3] PhD, William Widger PhD, Zhang Weihua[2] PhD MD, Lee M Ellis[1]MD.

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Purpose: Overcoming drug resistance in colorectal cancer (CRC) involves understanding the mechanisms by which cancer cells adapt to the genotoxic stress. We established a model of oxaliplatin resistant cells derived from HCT116 and HT29 (HCT116 OxR and HT29 OxR). How these resistant clones reprogram their energy metabolism to gain a survival advantage remains unknown. In this study, we hypothesized that chemoresistant CRC cells would exhibit altered cellular metabolism in order to survive following chronic genotoxic stress.

Methods: The expression level of glycolytic enzymes including HIF1α, Glucose transporter 1 (Glut1), hexokinase II (HK2), Lactic dehydrogenase (LDHA) were detected by Western Blotting. Glucose uptake and lactate production was calculated by measuring the concentration of glucose and lactate of the culturing media. Intracellular ATP/ADP levels, oxygen consumption and mitochondria ATP production were measured. In vivo xenograft study was used to compare the growth rate and angiogenesis of parental and oxaliplatin-resistant cells.

Results: Compared with the parental cells, both HT29-OxR and HCT116-OxR cells exhibit a metabolic phenotype with increased glycolysis as reflected by increased glucose uptake, lactate production and consistently unregulated glycolytic enzymes including Glut1, HK2 and LDHA. HIF1α expression and VEGF levels in the conditioned media are increased in the resistant cells. The mitochondria of OxR cells demonstrated defective complex I/II substrate ATP production despite increased cellular oxygen consumption. Importantly, the OXR cells maintain higher levels of intracellular ATP and ATP/ADP ratio indicating a metabolic switch to glycolysis. In tumor xenograft model, HT29 OxR cells grow significant slower than parental HT29 cells. Interestingly, when OxR cells were mixed with parental HT29 cells (50:50 and 90:10), tumor growth and microvessel counts were significantly accelerated.

Conclusion: Oxaliplatin-resistant cells demonstrate: 1) high aerobic glycolytic activity, 2) increase in HIF1α and glycolytic enzymes, and defective mitochondria functions. This metabolic switch provides more ATP production and likely contributes to the chemoresistant phenotype. Altering

energy metabolism such as blocking HIF1α may provide a novel strategy to overcome drug-resistance in CRC cells.

Key Words: Colorectal Cancer – Metabolism – Chemoresistance.

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Professional preparation:

Institution	Major	Degree & Year
University of Siena, Italy	Doctorate in Medicine and Surgery	MD; 2003
The University of Texas MDAnderson – Cancer Center. University of Texas, Houston	Cancer Biology Fellowship NIH-T32 training program	Post- Doc; 2009-2011

Positions:

07/07-07/09	General Surgery Residency, The Methodist Hospital, Weill Cornell Medical College, Houston, Texas
07/09-present	PostDoc Research Fellow, Surgical Oncology and Cancer Biology, The University of Texas MDAnderson Cancer Center, Houston, Texas

Honors:

2011 ASCO Cancer Foundation Merit Award

Publication:

Publications related to current projects in Cancer Biology

1. Bose D, Tozzi F, Zimmerman L, Herynk M, Fan F, Samuel S, Parikh A, Slebbos R, Petricoin, E, Liebler D, Ellis LM. Soluble factors in the chemoresistant colorectal cancer secretome. Annals of Surgical Oncology 17 (Supplement 1) (#P13), 2/2010.
2. Samuel S, Fan F, Dang LH, Gaur P, Xia L, Zhou Y, Liu J, Tozzi F, Sceusi E, Ye XC, Ellis LM. Autocrine Vascular Endothelial Growth Factor Signaling Mediates Survival and Chemoresistance of Human Colorectal Cancer Cells. Proceedings of the American Association for Cancer Research (#A365), 4/2010.
3. Lu J, Bose D, Zhou Y, Gaur P, Samuel S, Fan F, Xia L, Ye XC, Sceusi E, Tozzi F, Mani SA, Ellis LM. Endothelial Cells Promote the Cancer Stem Cell Phenotype of Human. Proceedings of the American Association for Cancer Research (#A1281), 4/2010.
4. Sceusi E, Rashid A, Zhou Y, Samuel S, Fan, F, Xia L, Lu J, Ye XC, Tozzi F, Gaur P, Yao J, Meyn R, Ellis LM. Methods for the Development of Carcinoid Cell Lines and Carcinoid Associated Fibroblasts. Proceedings of the American Association for Cancer Research (#A4106), 4/2010.
5. Fan F, Evans KW, Mani SA, Zhou Y, Samuel S, Lu, J, Xia L, Sceusi E, Tozzi F, Ye XC, Ellis LM. Overexpression of Snail Induces Epithelial-Mesenchymal Transition and Cancer Stem Cell-Like Phenotypes in CRC Cells. Proceedings of the American Association for Cancer Research (#A2300), 4/2010.
6. Bose D, Fan F, Tozzi F, Zimmerman L, Herynk MH, Pierobon M, Samuel S, Slebos R, Parikh A, Petricoin E, Liebler D, Ellis LM. Proteomic Analysis of Chemoresistance in Colorectal Cancer Cells: Potential Paracrine Mechanisms of Resistance. Proceedings of the American Association for Cancer Research (#A2276), 4/2010.
7. Zhou Y, Tozzi F, Chen J, Bose D, Fan F, Ling X, Wang J, Xia X, Brusher H, Widger W, Ellis LM, Weihua Z. Intracellular ATP plays a central role in the development of drug resistance, angiogenesis and growth of colon cancer. Antecipated publication 4/2010.

Italian Collections at the Harry Ransom Humanities Research Center: from Dante to Carlo Levi.

Two extraordinary men stand out in the history of our Research Center: Dr. Harry H. Ransom, the founder, and Dr. Thomas F. Staley, who, for the past twenty two years, as Director, took the Center from its extraordinary beginnings in the 50ties and 60ties to a new era of growth, openness and intellectual achievement.

Harry Ransom gave the University of Texas a treasure, a Research Library equal to any in the United States. Thomas Staley made it know and accessible by creating a Fellowships Program, yearly exhibits, conferences and scholars meetings. Both men were able to attract rich and generous donors who, especially in recent hard years for the Humanities, have given the Center the support that was needed.

I am proud to represent this Center, as Curator of the Italian Collections which are important not only in themselves, for they represent four centuries of Italian culture: literature, music, theater, and the sciences, but because most of these subjects are connected to other collections in the Center. Ancient manuscripts, Incunabula and rare editions are in the greatest number and were part of large families Libraries in Italy and, later, were the life time collecting of some British or American collectors. Libraries were formed in the seventeen and eighteen centuries in Italy, but the nineteen century was the time of the dispersal of most libraries. The reasons were political and historical: the interest of the nineteen century was on the formation of new political alliances and kingdoms and the past was for sale. The nineteen century saw a wave of British collectors descending on Italy, to buy entire libraries from noble families and convents. The country was in turmoil and the family libraries were no longer an object of interest or care. The second wave of acquisitions was aggressively pursued by a new rich country, the United States. After having formed their powerful industrial machine they realized they needed to build a cultural structure, with their new universities and libraries. So they turned to England, to buy from them what the British collectors had acquired a century earlier. And the auction houses of Sotheby and Christy entered the picture and sold entire collections to eager buyer, either private collectors or University libraries. This, in brief, is the "iter" of these collections that we, at the University of Texas were able to acquire to form our famous Research Center.

I will present the most important pieces in each collection: the 1363 Dante manuscript and the first Foligno edition of 1472. And the artistic interpretation of the twenty century, the Norman Bel Geddes scenes and custom designs of the 1920ties and 30ties.

The Renaissance illuminated manuscripts presented the challenge of dates and ownership, but a study of the illuminations and coat of arms, often led me to identify both owners and time. The largest collections of manuscripts is the Ranuzzi library: its origin, Bologna, the collector, a Cavaliere, Conte, Senatore Ferdinando Vincenzo Antonio Ranuzzi Cospi. It was a great day in the Bologna State Library when I came upon the will and testament of the Count, where he describes how he formed his library and how he wished that it would never be removed from his palazzo.

I will describe the manuscripts that will be of special interest to this audience, on medicine and a correspondence of a very famous doctor of the sixteen century.

I will then move on to the Venetian Renaissance printer Aldus Manutius and his collection of Incunabula and rare editions, the largest outside of Italy.

The music subject is well represented by a collection of 3,600 Opera libretti and the first edition of Aida, of 1871 performed to celebrate the opening of the Suez Canal. And most of these Libretti can be represented by the scenes and costumes designs by Alessandro Sanquirico and Luigi Bartezago, in the nineteen century and the most modern designer for La Scala, Emanuele Luzzati with his costumes for the Russian ballet "Chout" of 1968.

I will then quickly move on to such fascinating subjects as the marionettes of the Opera dei Pupi, and then at last I will explain the value of the Carlo Levi manuscript of "Cristo si e' fermato a Eboli" A comparison between his painting and his literary styles has been a fascinating study.
The last manuscript to mention is that of "Memoriale" by Paolo Volponi, 1959. An interesting study of what we can call the first "Industrial Novel".

I think I am right to say that we, at the University of Texas, have one of the largest Italian collections, favorably compared to Yale or any other Libraries in the USA. I can testify to that, I wrote a book about the Italian collections in the USA.

Dr. Maria X. Wells
The University of Texas at Austin

Manuscript leaf from Horace's *Opera cum commentario Acronis*, fifteenth century.


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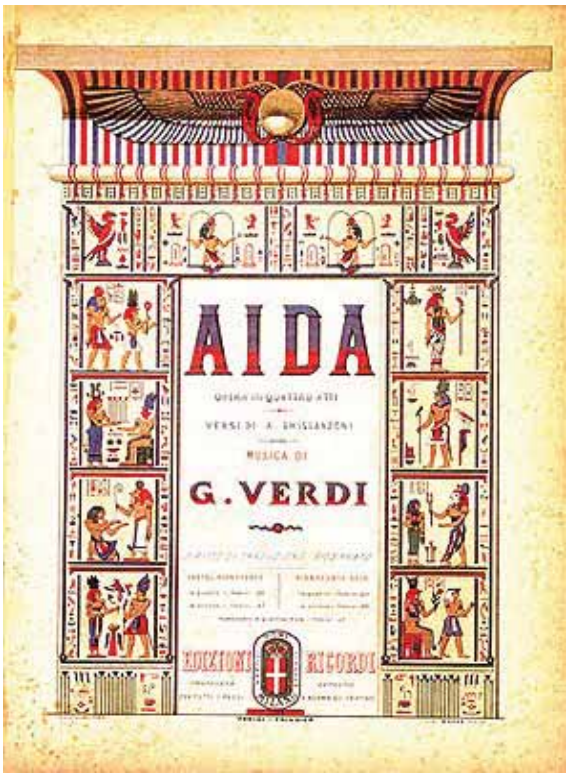
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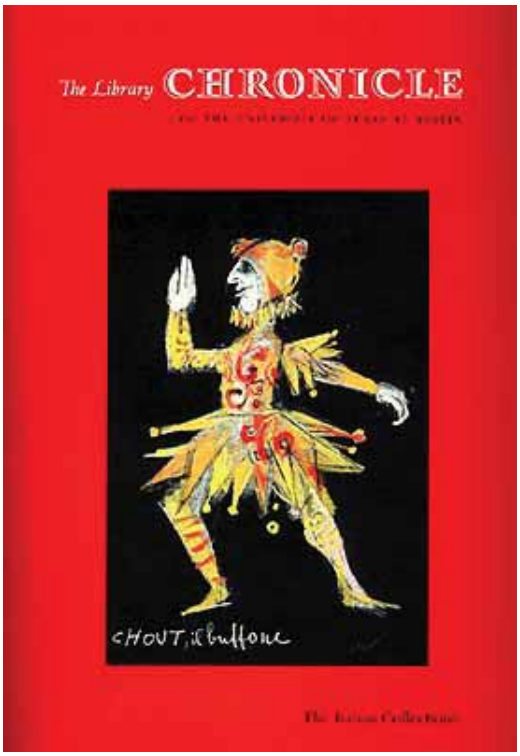
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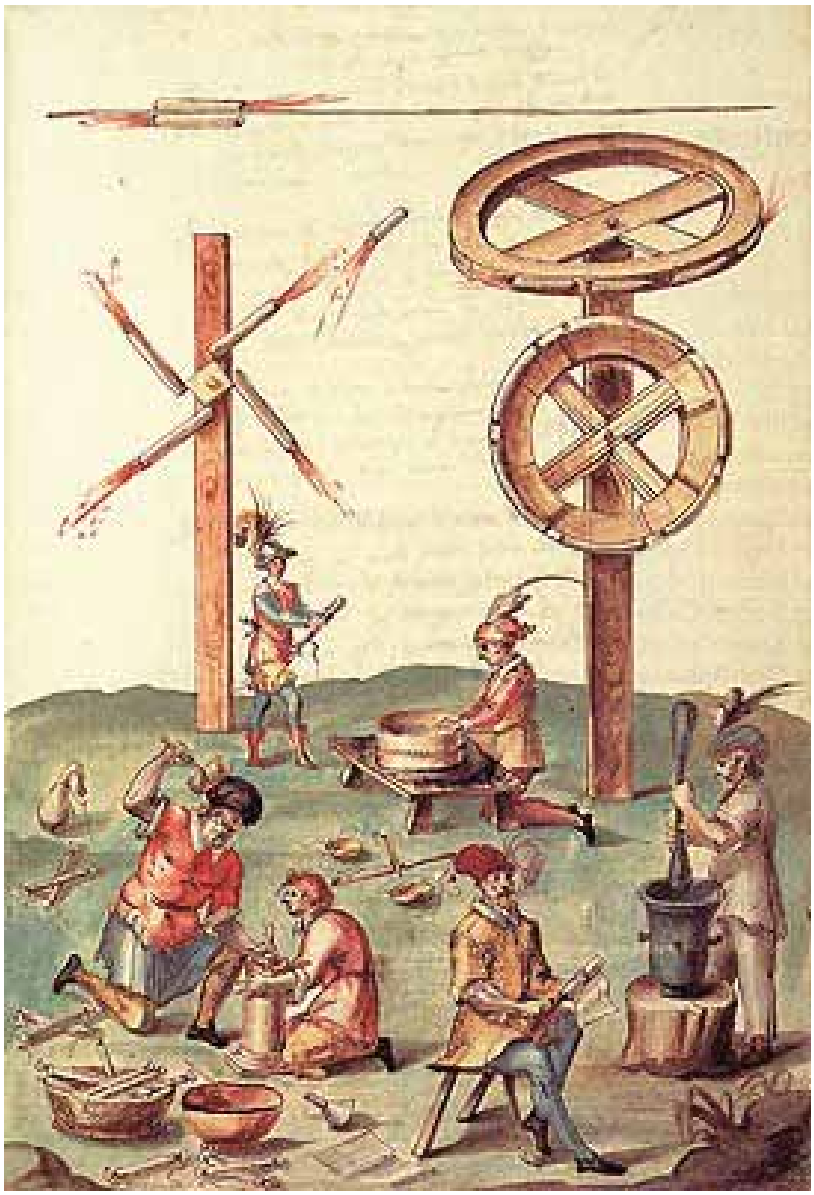
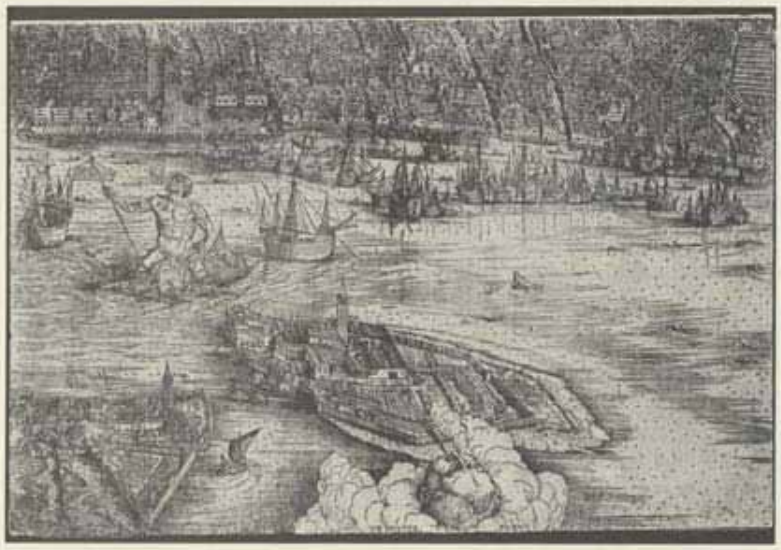
The Ranuzzi Manuscripts





Woodcut view of Venice by Jacopo de Barbari, 1514, one of six panels.

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1962-1972. Instructor/Lecturer, Romance Lanuages Department. French and Italian Department.

1959-1962. Instructor in Italian, University of Maryland, Pisa Campus, Italy. Assistant ot the Professor of American Literature, University of Pisa.

Presentations

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2005. "Carlo Levi, the Anti-Fascist Movement and the Holocaust in Italy." The Jewish Foundation, Austin, Texas.

2000. "Arte e poesia dialettale di Anita Pittoni, Trieste." Ateneo di Venezia.

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