Gil G. Mor, MD, PhD
Professor and Director
Division of Reproductive Sciences
Director, Discovery to Cure Translational Research Program
Department of Obstetrics, Gynecology & Reproductive Sciences
Yale University School of Medicine
New Haven, Connecticut 06520

Editor-in-Chief, American Journal of Reproductive Immunology
President-Elect, American Society for Reproductive Immunology
Research Interests

Immunology of Pregnancy

Research Summary

The main objective of our studies is to understand the communication between the maternal and fetal components of pregnancy and how pathogens contribute to the disruption of this crosstalk leading to preterm labor. Research in our laboratory includes the following areas:

Trophoblast Biology. Trophoblast response and regulation to inflammatory responses.

Our previous work has demonstrated the expression of Toll-like receptors on trophoblast cells and ligation of these receptors produce a cytokine/chemokine network in response to either endogenous or exogenous stimuli at the maternal fetal interface. Therefore, trophoblast cells serve as sensors for the recognition and response to the environment throughout implantation and gestation, suggesting that the trophoblast itself might act as an innate immune cell by recognizing microbial products. We currently are investigating the tight regulation of TLR function and signaling in trophoblast and how this contributes to their immunological role.

Immune cells regulation and function at the maternal/fetal interface. Maternal/fetal macrophages’ role in tolerance to bacterial infections and response to persistent viral infections.

In recognizing and responding to the uterine microenvironment, trophoblast may recruit immune cells such as macrophages and regulate their distribution and function. We are
currently investigating how trophoblast cells induce differentiation of macrophages into a membrane response to bacteria to prevent an inflammatory response.

**Infection in Pregnancy.** Mechanisms of immune, placental and decidua responses to pathogens leading to preterm labor. In vivo model of preterm in polymicrobial disease.

The laboratory is actively investigating how viral infection may disrupt the fetal-maternal interaction by modifying the function of TLRs. Our studies have shown that a viral infection of the placenta and decidua will lead to a disruption in immune cell distribution and function and consequently preterm labor. To further understand the role of infection in pregnancy we have developed an in vivo model looking at the mechanisms in polymicrobial disease at the maternal/fetal interface and preterm labor.

**Ovarian Cancer Program**

**Research Summary**

The objectives of the laboratory are to understand the role of ovarian cancer stem cells in the process of tumor formation, recurrence and chemoresistance. Research in our laboratory includes the following areas:

**Origin of Ovarian Cancer.** Identifying the signals originating from the ovaries that have the capacity to attract malignant tumor-initiating cells

We are currently investigating the origin of ovarian cancer. Studies in the laboratory have shown that tumor-initiating cells are attracted to the ovaries following ovulation and once the malignant cells reach the ovaries the ovaries are able to provide a “fertile soil” that can support tumor initiation. These findings have opened the opportunity for the development of new venues to prevent ovarian cancer by inhibiting the factors associated with the recruitment of transformed cells towards the ovaries. Furthermore, it has provided the identification of new markers for early detection.

We have developed a unique in vivo model for Stage I and II ovarian cancer.

**Recurrence and chemoresistance.** Identifying cancer stem cells as the source of chemoresistance and recurrence.

Another pressing question in the field of ovarian cancer research is why recurrent ovarian cancer does not respond to the therapy that was initially successful in inducing remission in the primary disease. Previous work in our laboratory has identified and characterized two types of ovarian cancer cells comprising a heterogeneous tumor and these two cell types respond differently to chemotherapies. We have identified a subgroup of cancer stem cells that promote the development of chemoresistance and
metastasis during the process of ovarian cancer recurrence. Ongoing research is directed to develop therapeutic modalities aiming to reverse this resistance.

**In vivo model of recurrence.** We have developed an intra-peritoneal (i.p.) recurrent ovarian cancer animal model that mimics the clinical profile observed in patients with EOC.

This animal model has allowed the identification of key factors involved in the promotion of metastasis and chemoresistance. Using this model we have identified specific chemotherapy-induced tumor modifications that contribute to the development of metastasis and chemoresistance. The Mor Lab has established an active drug screening system for the identification of novel compounds that can prevent recurrence and target chemoresistant recurrent disease. In addition our model has allowed identification of markers for predicting chemoresponse and therefore can aid in therapy selection or Personalized Medicine, which is a major objective of Dr. Mor’s laboratory.

This animal model is currently being used to develop a novel drug delivery system that specifically targets tumor blood vessels and not normal blood vessels

**Tumor Immune Interactions.** We have established the differential interaction of ovarian cancer cells with immune cells.

Our studies have shown that ovarian cancer stem cells modulate macrophage differentiation and function through the expression of unique modulatory cytokines while ovarian cancer cells promote Treg recruitment and function. These findings revealed a complex tumor immune interaction based on cancer cell type specific signals.
PERSONAL DATA
Date of birth: December 23, 1960.
Citizenship: USA, Israeli
Languages: English, Hebrew, and Spanish.
Web Page: http://www.medicine.yale.edu/obgyn/drs

EDUCATION:

<table>
<thead>
<tr>
<th>Year</th>
<th>Degree</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>Ph.D., Immunoendocrinology</td>
<td>Hormone Research Department, Weizmann Institute of Science, Rehovot, Israel</td>
</tr>
<tr>
<td>1988</td>
<td>M.Sc., Neuroendocrinology</td>
<td>Neurology Department, Hadassah Hospital, Hebrew University, Jerusalem, Israel</td>
</tr>
<tr>
<td>1987</td>
<td>M.D.</td>
<td>Hebrew University Medical School, Jerusalem, Israel</td>
</tr>
</tbody>
</table>

TRAINING

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994-1996</td>
<td>Postdoctoral Fellow</td>
<td>Laboratory of Immunobiology, Center for Biologics Evaluation and Research, FDA, National Institutes of Health, Bethesda, MD</td>
</tr>
<tr>
<td>1991</td>
<td>Fellowship</td>
<td>Reproductive Endocrinology, Max-Planck Institut fur Experimental Endocrinologie, Hanover, Germany</td>
</tr>
</tbody>
</table>
1990-1993  Clinical training in Reproductive Endocrinology, Department of Obstetrics and Gynecology, Kaplan Hospital, Rehovot, Israel
1988-1993  PhD thesis research in the laboratory of Prof. Fortune Kohen, Department of Hormone Research, The Weizmann Institute of Science, Rehovot, Israel
1986-1988  M.Sc. thesis research in the laboratory of Prof. Shaul Feldman, Neurology Department, Hadassah Hospital, Hebrew University, Jerusalem, Israel

<table>
<thead>
<tr>
<th>ACADEMIC APPOINTMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-present</td>
</tr>
<tr>
<td>2010-present</td>
</tr>
<tr>
<td>2008-2010</td>
</tr>
<tr>
<td>2004-present</td>
</tr>
<tr>
<td>2003-2007</td>
</tr>
<tr>
<td>1998-2002</td>
</tr>
<tr>
<td>1997</td>
</tr>
<tr>
<td>1997-1998</td>
</tr>
</tbody>
</table>
Gil Mor M.D., Ph.D.

Gynecology & Reproductive Sciences, Yale University School of Medicine, New Haven, CT

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>Course on Reproductive Immunology. 25 students, PhD, MD. Serial lectures. Huazhong University of Science and Technology, Wuhan China</td>
</tr>
<tr>
<td>2010-present</td>
<td>Path690: Molecular Mechanisms of Diseases. Ovarian Cancer. 15 students, PhD, MD lecture.</td>
</tr>
<tr>
<td>2005</td>
<td>Cell Biology. Graduate level. Yearly semester course. Lecture-discussion, 25 students. 3h/weekly class, 10 weeks duration</td>
</tr>
<tr>
<td>2004</td>
<td>Reproductive Immunology. Graduate and medical students. Lectures, 2h/weekly class, 4 weeks duration</td>
</tr>
<tr>
<td>2003</td>
<td>Seminar on Apoptosis and Cancer. Undergraduate students. 1 hour/weekly class, 4 weeks duration</td>
</tr>
<tr>
<td>2002-present</td>
<td>Immunology. Graduate level. Yearly semester course. Lectures, 22-28 students, 3h/weekly classes, 10 weeks duration</td>
</tr>
<tr>
<td>2001-2008</td>
<td>Developmental Biology. Graduate level. Yearly semester course. Lecture-discussion. 15 students. 3h/weekly classes, 10 week duration</td>
</tr>
<tr>
<td>2001-2008</td>
<td>Endocrinology. Graduate level. Semester course every two years. Lecture-discussion. 15 students. 3h/weekly classes, 10 week duration</td>
</tr>
<tr>
<td>1999-present</td>
<td>Undergraduate level, Lecturer on Reproductive Immunology. Course: Human Reproduction</td>
</tr>
<tr>
<td>1997-1998</td>
<td>Instructor, School of Health Sciences, San Francisco’s University, Quito, Ecuador. Medical Biology.</td>
</tr>
</tbody>
</table>

Courses and Educational Material

2004 Reproductive Immunology Course. Course Director
2004 Course pack on Reproductive Immunology for Medical Students and
Residents. Gil Mor, Editor, Landes Bioscience

MENTORSHIP

Donna Neale        SMFM/AAOGF Scholarship Award  2004
Donna Neale        NIH, LRP  2002-2004
Shawn Chavez       PEO Foundation Scholarship Award  2005
David O’Malley     Research Award - Gynecologic Cancer Foundation  2004
Michael Kelly      NIH, LRP  2005
Shawn Chavez       John Spangler Nicholas Dissertation Award  2006
Aliza Leiser        Program of Excellence Award Grant, Ovarian Cancer Research Fund  2007
Aliza Leiser        NIH, LRP  2007-2008
Rui Chen           President’s Award, Society for Gynecologic Investigation  2008
Rui Chen           John Spangler Nicholas Dissertation Award  2008
Kaori Koga         Blackwell Award, American Association for Reproductive Immunology  2008
Ingrid Cardenas    Travel Award, American Association for Reproductive Immunology  2009
Ilana Chefetz      Life Sciences Research Foundation Postdoctoral Fellowship 2009-2012; AACR Scholar-in-Training Award 2010; Young Scientist Program Travel Fellowship
Laura Fraccaroli   Fulbright Scholar Award  2012
Yang Yang-Hartwich Ovarian Cancer Research Fund  2014
Yang Yang-Hartwich Ovarian Cancer Academy Award-Early Career Investigator 2015
ACADEMIC AWARDS:

Professional Honors or Recognition

A) National

2016    Keynote Speaker “Twenty-second Annual Dr. Raymond O. Berry Memorial lecture”. Texas A&M University
2015    Keynote Speaker “Ellen Reed Memorial lecture” ovarian cancer.
2012    American Journal of Reproductive Immunology Award, American Society for Reproductive Immunology
2010    MAH, Yale University
2008    Harold Behrman Award, Yale University
2007    J. Christian Herr Award, American Society of Reproductive Immunology
2004    Placental Association of the Americas, Research Award (Mentor)
2002    Society for Maternal-Fetal Medicine, Research Excellence Award (Mentor); Annual Meeting
2001    American Society of Reproductive Immunology, New Investigator Award (Mentor), Annual Meeting
2000    American Society of Reproductive Immunology Award (Mentor), Annual Meeting
2000    Society for Gynecologic Investigation, Blue Ribbon Presentation
1999    American Society of Reproductive Immunology Award (Mentor), Annual Meeting
1995    ORISE Fellowship Award
1993    Guerchenson Scholarship Award

B) International

2015    Member International Advisory Committee for the Sino-American Center of Translational Medicine. Southern Medical University, China
2015    “Kiril Bratanov Medal Award” in Reproductive Immunology. Varna Bulgaria.
<table>
<thead>
<tr>
<th>Year</th>
<th>Role and Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Guest Professor, Huazhong University of Science and Technology, Wuhan China</td>
</tr>
<tr>
<td>2011</td>
<td>Honorary Professor, Second Affiliated Hospital of Medical College of Xi’An, Jiaotong University, Xi’An China</td>
</tr>
<tr>
<td>2007</td>
<td>Keynote Speaker, Japan Society for Immunology of Reproduction, Japan</td>
</tr>
<tr>
<td>2005</td>
<td>Honorary Member, Obstetrics and Gynecologic Society – Ecuador</td>
</tr>
<tr>
<td>2004</td>
<td>Honorary Member, Argentine Society of Gynecologic Endocrinology</td>
</tr>
<tr>
<td>2003</td>
<td>Honorary Member, Menopause Society – Argentina</td>
</tr>
<tr>
<td>2002</td>
<td>Honorary Member, Climacteric Society – Paraguay</td>
</tr>
<tr>
<td>2000</td>
<td>Honorary Member, Menopause Society – Chile</td>
</tr>
<tr>
<td>1991</td>
<td>Minerva Training Fellowship Award</td>
</tr>
<tr>
<td>1991</td>
<td>Israel Endocrine Society Award in Basic Endocrine Science</td>
</tr>
</tbody>
</table>

**Professional Service**

**Peer Review Groups/Grant Study Sections**

<table>
<thead>
<tr>
<th>Year</th>
<th>Group/Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Israel Science Foundation</td>
</tr>
<tr>
<td>2014</td>
<td><strong>Ad Hoc Member</strong>: NCI SPORE II, NCI, NIH</td>
</tr>
<tr>
<td>2014</td>
<td><strong>Ad Hoc Member</strong>: Special Emphasis panel ZAI1 FDS-(M1) 1 NIAID, NIH</td>
</tr>
<tr>
<td>2014</td>
<td>U.S. – Israel Binational Science Foundation</td>
</tr>
<tr>
<td>2014</td>
<td><strong>Ad Hoc Member</strong>: Special Emphasis panel, ZAI1-MFH-M-M1, NIAID, NIH</td>
</tr>
<tr>
<td>2011</td>
<td><strong>Ad Hoc Member</strong>: Special Emphasis Panel - ZRG1 OTC-C(02) Cancer Immuno Therapeutics, NCI, NIH</td>
</tr>
<tr>
<td>2011</td>
<td>U.S. – Israel Binational Science Foundation</td>
</tr>
<tr>
<td>2011</td>
<td><strong>Ad Hoc Member</strong>: MONC-Study Section, NCI, NIH</td>
</tr>
<tr>
<td>2010</td>
<td><strong>Ad Hoc Member</strong>: MONC-Study Section, NCI, NIH</td>
</tr>
<tr>
<td>2008</td>
<td><strong>Ad Hoc Member</strong>: SPORE in Breast, Gynecologic and Genitourinary Cancers, NCI, NIH</td>
</tr>
<tr>
<td>2007</td>
<td><strong>Ad Hoc Member</strong>: HED-1 Study Section, NICHD, NIH</td>
</tr>
<tr>
<td>2007</td>
<td>U.S. – Israel Binational Science Foundation</td>
</tr>
<tr>
<td>2004-prese</td>
<td>Grant Reviewer MRC, London England</td>
</tr>
</tbody>
</table>
2003  **Ad Hoc Member**: HED-1 Study Section, NICHD, NIH
2003  Grant Reviewer Wellcome Trust, London England
2002  **Ad Hoc Member**: Integration Panel Meeting, USAMRDC Ovarian Cancer Research Program

**Professional Organizations**

2016  **President-elect** American Society of Reproductive Immunology
2014  **Chair Session** on Inflammation at the Maternal Fetal Interface: NICHD/NIH workshop on immune Mechanisms at the Maternal Fetal Interface
2014  **Chair Session** on Immune System and the Placenta: NICHD/NIH workshop on the Human Placenta Project
2014  **Member, Advisory Board**, Scientific Reports, Nature
2013  **Co-Chair**, ISIR/ASRI Annual Meeting, Boston, MA
2012  **Elected Councilor**, International Society for Immunology of Reproduction
2010-present  **Editor-in-Chief**, American Journal of Reproductive Immunology
2011-present  **Editor**, Medical Journals
2008-2010  **Elected Treasurer**, American Society of Reproductive Immunology
2006  **Member, Editorial Board**, Recent Patents in Inflammation & Allergy
2006  **Chief Scientific Officer**, Archimedical USA Ltd.
2005-2008  Elected Secretary, American Society of Reproductive Immunology
2005  **Member, Editorial Board**, Eureka Bioscience
2005  **Member Editorial Board**, American Journal of Reproductive Immunology
2004-2013  **Scientific Committee**, American Society of Reproductive Immunology Annual Meeting
2004  **Member, Editorial Board**, Reproductive Sciences
2003  Program Chairman **and Organizer**, American Society of Reproductive Immunology Annual Meeting, Yale University, New Haven CT
2001-2005  **Elected Councilor**, American Society of Reproductive Immunology
Yale University Service –
Medical School Committees
2013-present Fellow, Trumbull College, Yale University
2013-present Director, WRHR, Yale University School of Medicine
2010-present Appointments and Promotions Committee, Department of Obstetrics, Gynecology & Reproductive Sciences, Yale University School of Medicine
2010-present Organizer and Director, Discovery to Cure International Clinical & Research Fellowship, Yale University School of Medicine
2006 Translational Research Committee, Yale Cancer Center
2004 Advisory Panel, WRHR, Yale University School of Medicine
2004 Advisory Committee Member, Yale CME, Yale University School of Medicine
2003 CME Task Force, Yale University School of Medicine
2003-present Organizer and Director, Discovery To Cure High School Internship, Yale University School of Medicine
2003 Web Master, Department of Obstetrics, Gynecology & Reproductive Sciences, Yale School of Medicine

MEMBERSHIPS:

· American Association for Cancer Research
· American Association for the Advancement of Science
· American Society of Reproductive Immunology
· Yale Comprehensive Cancer Center
· Society for Reproductive Investigation (formerly Society for Gynecologic Investigation)
· American Society of Immunology
PROFESSIONAL SERVICES

Consultant: Cyvek
Consultant: Teva-Oncotest Israel
Consultant: Novogen Ltd.
Consultant: Champion
Consultant: Archimedical USA
**Board Member:** Carestream
**Board Member:** CanTX

START UP COMPANIES

**SurExam:** China/USA
**Archimedical:** USA/Europe
**Mazor Oncology:** USA
**MBH Diagnostics:** Israel
**CanTx:** USA

REVIEWER: Editorial Board

Science
Biology of Reproduction
NeuroImmunoModulation
European Journal of Obstetrics & Gynecology and Reproductive Biology
Molecular Human Reproduction
Journal of Reproductive Immunology
Laboratory Investigation
American Journal of Reproductive Immunology
Obstetrics and Gynecology
Breast Cancer Research and Treatment
Oncogene
Journal of the Society for Gynecologic Investigation
CLINICAL TRIALS

LABORATORY ORIGINATED CLINICAL TRIALS:

- Phase Ib/II study of Phenoxodiol in patients with recurrent ovarian, fallopian and primary peritoneal cancer that is resistant to second line chemotherapy. 2002-2003
- Phase I study of Neodjuvant use of oral Phenoxodiol in patients with primary diagnosis of squamous adeno-carcinoma of the cervix, vagina and vulva. 2004-2005
- A non interventional, prospective study of the accuracy of the Precision Therapeutics, Inc. chemoresponse assay in patients with stage II-IV recurrent epithelial ovarian or primary peritoneal cancer. 2004-2005
- Multi-center, Phase Ib Safety and Preliminary Efficacy Study of Phenoxodiol (Intravenous Dosage Form) as a Chemo-Sensitizing Agent for Cisplatin and Paclitaxel in Recurrent Epithelial Ovarian Cancer. 2004-2005
- A Randomized Placebo-Controlled Phase Ib/IIa Safety, Tolerability and Efficacy Study of Oral Phenoxodiol in Combination with Docetaxel versus Docetaxel Alone in Patients with Recurrent Epithelial Ovarian, Fallopian Tube and Primary Peritoneal Cancer. 2005-

ACTIVE HUMAN INVESTIGATIONAL PROTOCOLS

HIC Protocol # 10425: The role of Fas Ligand system in gynecologic malignancies and pregnancy
HIC Protocol # 0606001587: The role of MyD88 expression in chemoresistance and disease progression in epithelial ovarian cancers

**PATENTS**

**Compositions and Methods for Treating Epithelial Cancer**

**Publication number:** 20170281588

**Abstract:** The present invention provides the eutomeric isomer of the compound of formula (I), or a salt or solvate thereof, which can be used to treat epithelial cancer in a subject. In certain embodiments, the compound of formula (I) can be used in combination with AICAR and/or cisplatin.

**Type:** Application

**Filed:** March 28, 2017

**Publication date:** October 5, 2017

**Inventors:** Gil G. MOR, Ayesha ALVERO

**IDENTIFICATION OF CANCER PROTEIN BIOMARKERS USING PROTEOMIC TECHNIQUES**

**Publication number:** 20170138950

**Abstract:** The claimed invention describes methods to diagnose or aid in the diagnosis of cancer. The claimed methods are based on the identification of biomarkers which are particularly well suited to discriminate between cancer subjects and healthy subjects. These biomarkers were identified using a unique and novel screening method described herein. The biomarkers identified herein can also be used in the prognosis and monitoring of cancer. The invention comprises the use of leptin, prolactin, OPN and IGF-II for diagnosing, prognosis and monitoring of ovarian cancer.

**Type:** Application

**Filed:** September 16, 2016

**Publication date:** May 18, 2017

**Inventors:** GIL G. MOR, DAVID C. WARD, PATRICIA BRAY-WARD
• **Identification of cancer protein biomarkers using proteomic techniques**

**Patent number:** 9470688

**Abstract:** The claimed invention describes methods to diagnose or aid in the diagnosis of cancer. The claimed methods are based on the identification of biomarkers which are particularly well suited to discriminate between cancer subjects and healthy subjects. These biomarkers were identified using a unique and novel screening method described herein. The biomarkers identified herein can also be used in the prognosis and monitoring of cancer. The invention comprises the use of leptin, prolactin, OPN and IGF-II for diagnosing, prognosis and monitoring of ovarian cancer.

**Type:** Grant

**Filed:** January 22, 2015

**Date of Patent:** October 18, 2016

**Assignee:** Yale University

**Inventors:** Gil G. Mor, David C. Ward, Patricia Bray-Ward

• **REMISSION THERAPY OF CANCER WITH ISOFLAVONOIDS**

**Publication number:** 20120251630

**Abstract:** Provided herein is a method of reducing incidences of cancer recurrence. The method involves administering to an individual in cancer remission an isoflavonoid. In specific instances, the treated individual is in remission from epithelial cancer, such as ovarian cancer or breast cancer.

**Type:** Application

**Filed:** March 29, 2012

**Publication date:** October 4, 2012

**Applicant:** MARSHALL EDWARDS, INC.

**Inventors:** Ayesha B. Alvero, Daniel P. Gold, Gil G. Mor

• **Drug resistance and methods of reversing**

**Patent number:** 7985538
Abstract: Described herein is a cellular marker, MyD88, useful for assessing an individual's (patient's) sensitivity (or resistance) to chemotherapy, particularly sensitivity (or resistance) to chemotherapeutic drugs, such as plant alkaloids (e.g., a taxane, such as paclitaxel or docetaxel). As described herein, Applicants provide a method by which it is possible to determine whether an individual (cancer cells in an individual) is sensitive to chemotherapy with plant alkaloids (e.g., a taxane, such as paclitaxel or docetaxel). Early identification of chemoresistance in patients with cancer is of utmost importance, particularly since it makes it possible to provide the most appropriate therapy.

Type: Grant

Filed: February 23, 2007

Date of Patent: July 26, 2011

Assignee: Yale University

Inventor: Gil G. Mor

• Identification Of Cancer Protein Biomarkers Using Proteomic Techniques

Publication number: 20100311047

Abstract: The claimed invention describes methods to diagnose or aid in the diagnosis of cancer. The claimed methods are based on the identification of biomarkers which are particularly well suited to discriminate between cancer subjects and healthy subjects. These biomarkers were identified using a unique and novel screening method described herein. The biomarkers identified herein can also be used in the prognosis and monitoring of cancer. The invention comprises the use of leptin, prolactin, OPN and IGF-II for diagnosing, prognosis and monitoring of ovarian cancer.

Type: Application

Filed: December 22, 2009

Publication date: December 9, 2010

Applicant: Yale University

Inventors: Gil G. Mor, David C. Ward, Patricia Bray-Ward
• **Methods of determining whether a pregnant woman is at risk of developing preeclampsia**

**Patent number:** 7790463

**Abstract:** The present invention provides methods and compositions related to biomarker profiles for each trimester of pregnancy. The present invention also provides methods for identifying patients at risk of developing a complication of pregnancy, such as preeclampsia. In further embodiments, the present invention relates to methods for the diagnosis of patients with preeclampsia.

**Type:** Grant

**Filed:** February 2, 2006

**Date of Patent:** September 7, 2010

**Assignees:** Yale University, The United States of America as represented by the Department of Health and Human Services

**Inventors:** Gil G. Mor, Donna Neale, Roberto Romero

• **Identification of cancer protein biomarkers using proteomic techniques**

**Patent number:** 7666583

**Abstract:** The claimed invention describes methods to diagnose or aid in the diagnosis of cancer. The claimed methods are based on the identification of biomarkers which are particularly well suited to discriminate between cancer subjects and healthy subjects. These biomarkers were identified using a unique and novel screening method described herein. The biomarkers identified herein can also be used in the prognosis and monitoring of cancer. The invention comprises the use of leptin, prolactin, OPN and IGF-II for diagnosing, prognosis and monitoring of ovarian cancer.

**Type:** Grant

**Filed:** January 18, 2005

**Date of Patent:** February 23, 2010

**Assignee:** Yale University

**Inventors:** Gil G. Mor, David C. Ward, Patricia Bray-Ward
- **Drug Resistance and Methods of Reversing**

  **Publication number:** 20090220427

  **Abstract:** Described herein is a cellular marker, MyD88, useful for assessing an individual's (patient's) sensitivity (or resistance) to chemotherapy, particularly sensitivity (or resistance) to chemotherapeutic drugs, such as plant alkaloids (e.g., a taxane, such as paclitaxel or docetaxel). As described herein, Applicants provide a method by which it is possible to determine whether an individual (cancer cells in an individual) is sensitive to chemotherapy with plant alkaloids (e.g., a taxane, such as paclitaxel or docetaxel). Early identification of chemoresistance in patients with cancer is of utmost importance, particularly since it makes it possible to provide the most appropriate therapy.

  **Type:** Application

  **Filed:** February 23, 2007

  **Publication date:** September 3, 2009

  **Applicant:** Yale University

  **Inventor:** Gil G. Mor

- **In vitro test to detect risk of preeclampsia**

  **Patent number:** 7541182

  **Abstract:** The present invention provides methods for identifying patients at risk of developing preeclampsia. In further embodiments, the present invention relates to methods for the diagnosis of patients with preeclampsia.

  **Type:** Grant

  **Filed:** February 13, 2004

  **Date of Patent:** June 2, 2009

  **Assignees:** Yale University, The United States of America as represented by the Department of Health and Human Services

  **Inventors:** Gil G. Mor, Donna Neale, Roberto Romero
FUNDED RESEARCH GRANTS and AWARDS

GRANT HISTORY

ACTIVE:
Agency: National Institutes of Health, NCI
ID#: RCA199004A
Title: Targeting the vascularity for delivery of inhibitors of metastasis in ovarian cancer
PI: Gil Mor
Percent effort: 30%
Direct Cost per year: $636,016.00
Total Cost: $3,180,000
Period: 20015-2020

Agency: National Institutes of Health, PRB, NICHD
ID#: NICHD. 3N01 HD23342
Title: Studies of infection During Pregnancy
PI: Gil Mor
Percent effort: 10%
Direct cost per year: $134,000
Total Cost: 224,508
Period: 20017-2018

Agency: McKern Award
Title: Infection and pregnancy
Project Role: PI
Direct Cost: $200,000
Period: 2015-2017

Agency: CanTx
Title: New Therapies for cancer stem cells
Project Role: PI
Direct Cost: $1.5 million
**Period:** 2014-2017

**Agency:** National Institutes of Health, NICHD  
ID#: 1R01HD0722591-01  
Title: Discovery to Cure Summer Program  
Role Project: PI  
Percent effort: 10%  
Direct Cost per year: $93,493  
Total Cost: $465,989  
Period: 2018-2022

**Agency:** Sands Foundation  
Title: New approaches for detection and treatment of ovarian cancer  
P.I: Gil Mor  
Direct Cost per year: $50,000  
Total Cost: $500,000  
Period: 2007-2018

**PREVIOUS GRANTS**

**Agency:** National Institutes of Health, NCI  
ID#: R01-CA127913  
Title: MyD88 bearing tumors in immune regulation and chemoresistance  
P.I: Gil Mor  
Percent effort: 30%  
Direct Cost per year: $250,000  
Total Cost: $2,068,021  
Period: 2008-2014

**Agency:** National Institutes of Health, NCI
ID#: 1R56AI124356-01
Title: Effect of polymicrobial infection on trophoblast-macrophage interactions
PI: Gil Mor
Percent effort: 10%
Direct Cost per year: $241,317
Total Cost: $401,793
Period: 20015-2016

Agency: National Institutes of Health, NICHD
ID#: PO1 HD054713-01
Title: Function of TLRs throughout gestation
Role Project: Program Director/PI Project I
Percent effort: 30%
Direct Cost per year: $744,391
Total Cost: $6,593,337
Period: 2009-2015

Agency: National Institutes of Health, NCI
ID#: R01 CA-05-011
Title: CT of exercise on ovarian cancer prognosis
PI: Melinda Irwin
Role on Project: Co-investigator
Percent effort: 5%
Direct Cost per year: $99,986
Total Cost: $499,932
Period: 2009-2014

Agency: National Institutes of Health, PRB, NICHD
ID#: NICHD. 3N01 HD23342
Title: Studies of Toll-like Receptors and Trophoblast Apoptosis During Pregnancy
PI: Gil Mor
Percent effort: 10%
Direct cost per year: $165,000
Total Cost: $1,107,708
Period: 2005-2014

Agency: Janet Burros Foundation
Title: Characterization of the Human Ovarian cancer stem cells
PI: Gil Mor
Percent effort: 10%
Direct Cost per year: $150,000
Total Cost: $450,000
Period: 2008-2011

Agency: NCI, National Institutes of Health
ID#: R01 CA97237-01
Title: Apoptosis and Cancer
PI: Gil Mor
Percent effort: 20%
Direct Cost per year: $190,000
Total Cost: $1,571,380
Period: 2007-2012

Agency: BSF
ID#: 2009125
PIs. Gil Mor/Nava Dekel
Total Cost: $ 152,000
Direct Cost per year: $ 38,000

Agency: Merck
ID#: LKR58172
Title: Aurora inhibitors fro treatment of ovarian cancer
PI: Gil Mor  
Percent effort: 0%  
Direct Cost per year: $147,558  
Total Cost: $147,558  
Period: 2010-2011

**Agency:** National Institutes of Health, PRB, NICHD  
ID#: NCI, AS0042  
Title: Apoptosis and ovarian Cancer  
PI: Gil Mor  
Percent effort: 0%  
Direct cost per year: $102,000  
Total Cost: $168,810  
Period: 2009-2011

**Agency:** National Institutes of Health, National Cancer Institute, EDRN  
ID#: M127068  
Title: Markers for Early detection of Ovarian Cancer  
PI: Gil Mor  
Percent effort: 5%  
Direct Cost per year: $50,000  
Total Cost: $150,000  
Period: 2006-2008

**Agency:** National Institutes of Health, National Cancer Institute, EDRN  
ID#: 1 U01CCA084986  
Title: Multiplex Serum Biomarker For Ovarian Cancer  
PI: Gil Mor  
Percent effort: 10%  
Direct Cost per year: $83,000
Total Cost: $ 267,000  
Period: 2007-2009

**Agency: Orthobiotech**  
Title: Effect of Doxil on MyD88 positive ovarian cancer tumors  
PI: Gil Mor  
Percentage Effort: 10%  
Direct Cost per year: $ 50,000  
Total Cost: $57,500  
Period: 2007-2008

**Agency: LabCorp of America**  
ID#: R06972  
Title: Develop of New Tests for Early Detection  
PI: Gil Mor  
Percentage Effort: 15%  
Direct Cost per year: $ 150,000  
Total Cost: $450,000  
Period: 2006-2009

**Agency: Brady Foundation**  
ID#: 52111A  
Title: New Treatments for Ovarian cancer.  
PI: Gil Mor  
Percentage effort: 0%  
Total Cost: $2,000,000  
Period: 2004-2009

**Agency: Astra Zeneca**  
Title: Effect of AZD6244 in ovarian cancer cells  
PI: Gil Mor
Percentage Effort: 0%
Direct Cost per year: $ 50,000
Total Cost: $57,500
Period: 2006-2007

Agency: National Institutes of Health, NCI
ID#: R01 CA92435-01
PI: Gil Mor
Title: Fas/FasL system in Normal Mammary gland Development
Effort: 70%.
**Total Cost:** 750,670
Total Cost per year: $200,000
Period: 07/01/2001-06/30/2005

Agency: National Institutes of Health, NICHD
ID#: RO1 HD37137-01A2
Title: Immune Acceptance of pregnancy
PI: Dr. Gil. Mor
Effort: 30%. Total Cost: $636,670
Total Cost per year: $147,748

Agency: National Institutes of Health, NICHD
Title: Polymorphism in IL-10 Locus predispose to preterm birth
Role: Consultant
Effort: Consultant fee: $10,000
Total Cost: $255,986
Period: 2001-2006

Agency: Glaxo-Smith-Klein
Title: Preclinical study of Phenoxodiol in combination with Topotecan
PI: Gil Mor
Total Cost: $25,000
Period: 2005-2006

**Agency: Marshall Edwards PTY Limited**
ID#R06913
Title: Preclinical Studies For Nv128 As A Chemosensitizer
PI: Gil Mor
Direct Cost per year: $65,000
Total Cost: $89,925
Period: 2006-2007

**Agency: Array Biopharma**
Title: Effects of Kinase inhibitors in ovarian cancer
PI: Gil Mor
Direct Cost per year: $53,000
Total Cost: $60,000
Period 2006-2007

**Agency: Jeff Mayersohn Foundation**
Title: Ovarian Cancer: New Therapies for Ovarian Cancer.
PI: Gil Mor
Direct Cost per year: $440,000
Total Cost: $500,000

**Agency: Marshall Edwards PTY Limited**
Title: Characterization of the molecular mechanism of action of NV 143
PI: Gil Mor
Direct Cost per year: $195,000
Total Cost: $265,000

**Agency: National Institutes of Health, NICHD**
ID #: RO1HD049446-01
Title: Innate Immune Responses of Trophoblasts in Pregnancy
PI: Vikki M Abrahams
Role on project: Co-Investigator
Percentage Effort: 20%
Direct Cost per year: $168,000
Total Cost: $1,809,000
Period: 2005-2010

**Agency: Fannie E. Rippel Foundation**
Title: Use of a Novel siRNA Delivery System to Restore Chemosensitivity to Epithelial Ovarian Cancer Cells
PI: Yingqun Huang
Role in the Project: Co-investigator
Percentage Effort: 5%
Total Cost: $75,000

**Agency: Marshall Edwards PTY Limited**
Title: Phase I study of Neoadjuvant use of oral phenoxodiol in patients with primary diagnosis of squamous adenocarcinoma of the cervix, vagina or vulva
PI: Masoud Azodi
Role in the Project: Co-investigator
Percentage Effort: 10%
Total Cost: $600,000

Agency: Marshall Edwards PTY Limited
Title: Multi-Center Phase Ib/II Study of Phenoxodiol in Patients with Recurrent Ovarian, Fallopian and Primary Peritoneal Cancer that is Resistant to Second Line Chemotherapy
Role: Co-Investigator
Total Cost: $960,000

Agency: Merck Research Grant
Title: Regulation of apoptosis by Cox-2 inhibitors.
PI:
Total Cost: $65,000
Period: 2003-2004

Agency: The Ethel F. Donaghue Women’s Health Investigator Program
Title: Trophoblast Viability: Can It Be Used As a Predictor of Preeclampsia?
PI: Donna Neale
Effort: Co-investigator 5%
Total Cost: $50,000
Period: 7/1/2003 - 6/30/2004

Agency: Department of Defense
ID#: BC972770
Title: “Macrophages, estrogen and the microenvironment in breast cancer”
PI: Frederick Naftolin
Effort: 75% Co-investigator
Total Cost: $210,000
Period: 04/01/1998-03/31/2001

Agency: Office of Research on Women’s Health (ORWH)/NICHD
ID#: 1R55HD37137-01A1 "Immune Acceptance of Pregnancy"
P.I.: Dr. Gil. Mor
Effort: 40%

**Total cost:** $75,000
Period: 9/1/1999-8/31/2001

Agency: AVENTIS Research Grant
Title: Fas-mediated apoptosis in ovarian cancer cells.
PI: Gil Mor
Total Cost: $81,000
Period: 2001-2002

Agency: NOVOGEN Research Grant
Title: Phenoxodiol for the treatment of ovarian cancer
PI: Gil Mor
Total cost: $ 80,000
Period: 2002-2003

Agency: NOVOGEN Research Grant
Title: Characterization of the mechanism of action of NV compounds on immune and cancer cells.
PI: Gil Mor
Total Cost: $ 50,000
Period: 2001-2002

Agency: Johnson & Johnson
Title: Genistein and the immune system
PI: Gil Mor
Total Cost: $16,000
Period: 2000

Agency: Solvay Research Grant
Title: Effects of Methyltestosterone on aromatase activity of normal and breast cancer
cells.
PI: Gil Mor
Total Cost: $89,000
Period: 2000-2002

Agency: Office of Research on Women's Health, National Institutes of Health
ID#: 1R55HD37137-01A1
Title: Immunology of pregnancy
PI: Gil Mor
Total Cost: $100,000
Period: 1999-2001

Agency: Eli Lilly Research Grant
Title: Raloxifene regulation of Fas Ligand expression on breast cancer
PI: Gil Mor
Total Cost: $50,000
Period: 1999

Agency: Hellman Fellowship Award
Title: Immunology of normal and pathologic Pregnancies
PI: Gil Mor
Total Cost $20,000
Period: 1999
PEER REVIEWED PUBLICATIONS


19. Hagiwara E, Mor G, Abbasi F, Klinman D (1995) Phenotype and frequency of cells secreting IL-2, IL-4, IL-6, IL-10, INFg and TNFa in the peripheral Blood. Cytokines. 7: 815-822.


48. Mor G (1999) Menopause, estrogens and the immune system Boletin de la Sociedad Chilena de Climaterio. 4:14-16


100. Sapi E, Chen W, O’Malley D, Ying X, Dwipoyono B, Kamsteeg M, Rutherford T, Mor G (2004). Resistance of Ovarian Cancer Cells to Taxotere (Docetaxel) is XIAP Dependent and Reversible by Phenoxodiol. Oncology Research. 14, (11-12) 567-578


162. Alvero AB, Fu HH, Holmberg J, Visintin I, Mor L, Marquina CC, Oidtman J, Silasi DA, Mor G. 2009 Stem-Like Ovarian Cancer Cells can serve as tumor vascular progenitors, Stem Cell: 27:2405-2413.


enterotoxin carboxy-terminal fragment is a novel tumor-homing peptide for human ovarian cancer. BMC Cancer Jul 2;10:349


239. Racicot K, Kwon JY, Aldo P, Abrahams V, El-Guindy A, Romero R, **Mor G**. (2016) Type 1 Interferon Regulates the Placental Inflammatory Response to Bacteria and is Targeted by Virus: Mechanism of Polymicrobial Infection-Induced Preterm Birth *American Journal of Reproductive Immunology*. 75(4):451-60. PMID:6892235


CHAPTER BOOKS AND EDITORIALS


7. Mor G. (Editor) (2004) Introduction to reproductive Immunology, Immunology of Implantation. Landes Bioscience Press


BOOKS

1. **IMMUNOLOGY OF PREGANCY.** Editor: Gil Mor Medical Intelligence Unit Springer, LANDES Bioscience 2006

2. **APOPTOSIS AND CANCER.** Editors: Gil Mor and Ayesha Alvero Methods in Molecular Medicine. Humana Press. 2007 Vol. 414


PRESENTATIONS AT MEETINGS  (up to 2005)


Strasewski-Chavez S, Abrahams V, Mor G (2004) TNFα induces trophoblast apoptosis by upregulating XIAP-Associated Factor 1 (XAF-1) Society for Gynecologic Investigation Houston Texas. Abstract # 315


26. Song J, Sapi E, Mor G (2002) Fas Ligand activation by estrogen receptors at the ERE and AP-1 sites SGI, Los Angeles Abstract # 573
27. Hanczaruk B, Sapi E, Rutherford T, Mor G (2002) Regulation of the Fas/FasL system by progesterone in human ovarian cells SGI, Los Angeles Abstract # 850
34. Song J, Aschkenazi S, Naftolin F, Mor G(2001) Sex Hormones, Apoptosis and the Fas/Fas Ligand System in Normal Endometrial Tissue Remodeling. SGI, Toronto, Abstract t# [438]
39. Aschkenazi S, Mor G (2001) TH-1 and TH-2 Type Cytokines Regulates Fas-Mediated Apoptosis in First Trimester Trophoblast Cells: Role of the Fas/Fas Ligand System in Implantation. SGI, Toronto, Abstract t# [226]
40. Song J, Aschkenazi S, Naftolin F, Mor G (2001) Sex hormones, apoptosis and the fas/fas ligand system in normal endometrial tissue remodeling. SGI, Toronto SGI, Toronto, Abstract t# 438


47. Song J, Sapi E, Nilsen J, Lim HC, Naftolin F, Mor G (2000) The Role of the Fas/Fas Ligand System in Breast Tissue: Normal Differentiation Versus Breast Cancer. SGI Chicago IL, Abstract # 531


53. Nilsen J, Mor G, Naftolin F (1999) Raloxifene is an estrogen agonist, inducing neurite outgrowth in PC12 cells. Society for Gynecologic Investigation, Atlanta, Georgia. Abstract # 723


58. Diano S, Mor G, Horvath T, Register T, Adams M, Naftolin F (1997) Estrogen formation by coronary arteries. The presence of immunoreactive-Aromatase (irARO) and estrogen receptors (irER) in monkey and human coronary arteries. 8th Annual Meeting. NAM, Boston, MA.


## MENTORING (SINCE 1999)

<table>
<thead>
<tr>
<th>Post-Doctoral fellows</th>
<th>Undergraduate Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santiago Brown PhD</td>
<td>Michael Ziffra BA</td>
</tr>
<tr>
<td>Sarit Ashkenasi MD</td>
<td>Lucy Gordon, BA</td>
</tr>
<tr>
<td>Karlijn Verwer MD</td>
<td>Rebecca Rosen, BA</td>
</tr>
<tr>
<td>Joon Song MD, PhD</td>
<td>Amanda Muñoz BA</td>
</tr>
<tr>
<td>Chim Lim MD</td>
<td>Ellen Morrow, BA</td>
</tr>
<tr>
<td>Ivaldo Silva MD, PhD</td>
<td>Rich Redlinger, BA</td>
</tr>
<tr>
<td>Xiaoying Chen MD</td>
<td>Kelly Poggio BA</td>
</tr>
<tr>
<td>Marijke Kamsbeeg MD</td>
<td>Bibi Lesh BA</td>
</tr>
<tr>
<td>Vikki Abrahams PhD</td>
<td>Lindsay Simon BA</td>
</tr>
<tr>
<td>Key Song PhD</td>
<td>Scott DeSanders BA</td>
</tr>
<tr>
<td>Wei Chen MD</td>
<td>Courtney Costas BA</td>
</tr>
<tr>
<td>Ayesha Alvero MD</td>
<td>Adam Lipworth BA</td>
</tr>
<tr>
<td>Jianjun Li MD</td>
<td>Serena Chen, BA</td>
</tr>
<tr>
<td>Dong Hee Wang MD</td>
<td>Ingrid Ramirez BA</td>
</tr>
<tr>
<td>Stefan Fest MD</td>
<td>Thomas Ebinger BA</td>
</tr>
<tr>
<td>Ki Hyung Kim, MD</td>
<td>Manish Garg MS</td>
</tr>
<tr>
<td>Karina Dahl MD</td>
<td>Melisa Carrasco BA</td>
</tr>
<tr>
<td>Kaori Koga, MD</td>
<td>Alexandra Mazur BA</td>
</tr>
<tr>
<td>Bing Peng, MD</td>
<td>Ifeanyi Anidi BA</td>
</tr>
<tr>
<td>Ingrid Cardenas MD</td>
<td>Avanti Verma</td>
</tr>
<tr>
<td>Kyongjin Kim M.D.</td>
<td>Noah Lebowitz</td>
</tr>
<tr>
<td>Ilana Chafetz PhD</td>
<td>Vinicius Craveiro</td>
</tr>
<tr>
<td>Guy Nadal PhD</td>
<td>Sean Barwis</td>
</tr>
<tr>
<td>Post-Doctoral fellows</td>
<td>Undergraduate Students</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Gang Yin PhD</td>
<td>Vera Wunsche</td>
</tr>
<tr>
<td>Yang Yang PhD</td>
<td>Sudhakar Nuti</td>
</tr>
<tr>
<td>Karen Racicot PhD</td>
<td>Sabrina Gill</td>
</tr>
<tr>
<td>Severina Haddad</td>
<td>Amanda Kelly</td>
</tr>
<tr>
<td>Won Duk Joo, MD</td>
<td>Brian Griffin</td>
</tr>
<tr>
<td>Carlos Cardenas, MD</td>
<td>Emma Graham</td>
</tr>
<tr>
<td>JayKwon Young, MD</td>
<td>Liora Mor</td>
</tr>
<tr>
<td>Go Ichikawa, MD</td>
<td>Amanda Kelly</td>
</tr>
<tr>
<td>Roslyn Tedja PhD</td>
<td>Emily Romanoff</td>
</tr>
<tr>
<td>Xian-Yong Ma PhD</td>
<td>Jessica Schmerler</td>
</tr>
<tr>
<td>Cai Roberts PhD</td>
<td>Jamie Bingham</td>
</tr>
<tr>
<td>Jiahui Ding, MD</td>
<td>Bria Greene</td>
</tr>
<tr>
<td>Juanni Li MD</td>
<td>Emily Romanoff</td>
</tr>
<tr>
<td></td>
<td>Julia Pomerantz</td>
</tr>
<tr>
<td></td>
<td>Waverly Brim</td>
</tr>
<tr>
<td></td>
<td>Triet Bui</td>
</tr>
<tr>
<td></td>
<td>Shivali Gupta</td>
</tr>
<tr>
<td></td>
<td>Tess Cersonsky</td>
</tr>
<tr>
<td></td>
<td>Nicole Martin</td>
</tr>
<tr>
<td>Medical students Residents and Fellows</td>
<td>Graduate Students</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Mariel Eliza M.D.</td>
<td>Jon Nilsen PhD (Dr. Frederick Naftolin)</td>
</tr>
<tr>
<td>Wendi Brown M.D.</td>
<td>Shawn Straszewski PhD</td>
</tr>
<tr>
<td>Saeher Muzaffar</td>
<td>Rui Chen PhD</td>
</tr>
<tr>
<td>Adam Gafni-Kane</td>
<td>Paulomi Aldo Msc</td>
</tr>
<tr>
<td>Kafui Demasio MD</td>
<td>Karthika Veeraraj Msc</td>
</tr>
<tr>
<td>Donna Neale MD</td>
<td>Michelle Montagna Msc</td>
</tr>
<tr>
<td>Shohreh Shahabi, MD</td>
<td>Han-Hsuan Fu Msc</td>
</tr>
<tr>
<td>David O’Malley MD</td>
<td>Juanni Li PhD</td>
</tr>
<tr>
<td>Maria J. Small MD</td>
<td></td>
</tr>
<tr>
<td>Mike Kelly MD</td>
<td></td>
</tr>
<tr>
<td>Dan Arin-Silasi MD</td>
<td></td>
</tr>
<tr>
<td>Aliza Leiser MD</td>
<td></td>
</tr>
<tr>
<td>Rinki Agarwal MD</td>
<td></td>
</tr>
<tr>
<td>Jaime Green MD</td>
<td></td>
</tr>
<tr>
<td>Susan Maya MD</td>
<td></td>
</tr>
<tr>
<td>Emily Thomas MD</td>
<td></td>
</tr>
<tr>
<td>Michelle Silasi, MD</td>
<td></td>
</tr>
</tbody>
</table>
LECTURES:

Outside Yale
(Main lectures 1999-2017)

2017: Invited Speaker: Wayne State University, Hutze Women’s Hospital, The Role of Placenta as an Immune Regulatory Organ, Detroit, Michigan


2017: Invited Speaker: Wayne State University, Peniatology Research Branch, The Unique immunological and Microbial aspect of Pregnancy and Role of Polymicrobial Infection on Viral Induced Teratogenic Effect, Detroit, Michigan

2017: Invited Speaker: Tongji Medical College’s 110th Anniversary Celebration, The Unique Immunologocal and Microbial Aspect of Pregnancy, Wuhan, China

2017: Invited Speaker: MRC Centre for Reproductive Health, The Unique Immunological and Microbial aspect of Pregnancy, Edinburgh, United Kingdom

2017: Invited Speaker: Seminar Series for Stanford Immunology, Role of Poly Microbial Infection During Pregnancy on Maternal and Fetal Well Being, Stanford, California

2016: Invited Speaker: 63rd Annual Scientific Meeting SRI, The Relationship Between Viral Infections and Preterm Labor, Montreal, Canada

2016: Invited Speaker: Sociedad Argentina De Endocrinologia Y Reproductiva, Inflamacion e implantacion (Inflammation and Implantation), Buenos Aires, Argentina

2016: Invited Speaker: UT Southwestern, Reproductive Biology Seminar Series, Trophoblast microbiome Interaction: A New Paradigm on Immune Regulation, Dallas, Texas

2016: Invited Speaker: IFPA, Viral Infection and the Placenta Symposium, The Role of Polymicrobial Infection on Viral-Induced Teratogenic Effects, Portland, OR

2016: Invited Speaker: 3rd Reproductive Immunology Conference, The effect of viral infection during pregnancy on fetal development, Shenzhen, China;


2016: Invited Speaker: Faculty of Reproductive Biology Retreat, R.O. Berry Memorial Lecture, Polymicrobial Infections during pregnancy: maternal and fetal risks, Texas A&M, College Station, TX

2016: Invited Speaker: Reproductive and Developmental Sciences Program, Origins of Ovarian Cancer and Mechanisms of Recurrence, Michigan State University, Grand Rapids, MI

2016: Invited Speaker: American Society for Reproductive Immunology (ASRI 36th Annual Meeting), Viral infections during pregnancy, Baltimore, MD

2015: Invited Speaker: 62nd Annual Scientific Meeting, SRI, Trophoblast Immune Interactions, San Francisco, CA

2015: Invited Speaker, 2015 Annual Meeting, American Association of Immunologists, Role of Placenta Type I Interferon on Polymicrobial Infection-Induced Preterm Birth, New Orleans, LA

2015: Invited Plenary Lecturer, 14th International Symposium for Immunology of Reproduction, Polymicrobial Infection and Pregnancy, Varna, Bulgaria

2015: Invited Speaker, 35th Annual Meeting, American Society for Reproductive Immunology, Immunology of Gynecologic Tumors, Queens University, Kingston, Ontario, Canada

2015: Invited Speaker: New Trends in Clinical and Basic Research on Reproductive Immunology, Inflammation and Pregnancy, Chongqing City, China

2015: Invited Speaker: Inflammation and Implantation, Third Military Medical University, Chongqing; China

2015: Invited Speaker: China Human Placenta Project, Trophoblast-microbiome interaction: A new paradigm on (sic) immune regulation Guangzhoun China

2015: Invited Speaker: Eular Congress, Estrogens and the Immune System Response in Pregnancy, Rome, Italy


2015: Invited Speaker: Provocative Ideas on (sic) Human Placental Research, Inflammation and infection: Fetal Response, Faridabad, India
2015: Invited Speaker: Sydney West Translational Cancer Research Centre, Ovarian Cancer Stem Cells: Origin and Chemoresistance, Dunedin, New Zealand

2015: Invited Speaker: City of Hope, Leading Edge Lectures, Ovarian cancer stem cells and TWIST: Implications for chemoresistance and metastasis, Los Angeles, CA

2014: Invited Speaker: SGI PREBIC, Preterm Labor: A Polymicrobial Disease?, Florence, Italy

2014: Invited Speaker: Eunice Kennedy Shriver NICHD, The Human Placenta Project: Placental Structure and Function in Real Time, Potomac, MD

2014: Invited Speaker: International Scientific Association for Probiotic S and Prebiotics Conference, Aberdeen, Scotland

2014: Invited Speaker: Drug Discovery & Therapy World Congress 2014, In vitro and in vivo Efficacy of a Novel Superbenzopyran Analogue Trx1 Against Platinum-resistant Ovarian Cancer Stem Cells, Boston, MA

2014: Invited Speaker: New Trends in Clinical and Basic Research on Reproductive Immunology, Inflammation and Implantation, Shenzhen Zhongshan Urology Hospital and Reproductive Medical Centre, Third Military Medical University, China

2014: Invited Speaker: Nihon University School of Medicine, Trophoblast Immune Interaction, Tokyo, Japan

2014: Invited Speaker: University of Tokyo, Origins of Ovarian Cancer, Tokyo, Japan

2014: Invited Speaker: Joint Workshop on Immune Mechanisms at the Maternal-Fetal Interface, Uterine Function and Implantation Biology Program, NICHD, DAIT, NIAID, NIH, Inflammation and implantation: the role of dendritic cells, and Inflammation at the maternal-fetal interface, Rockville, MD

2014: Invited Speaker: 9th Annual Meeting of the Interdisciplinary Collaborative Team on Blastocyst Implantation Research, Role of Toll-like receptors in trophoblast immune regulation, Rockville, MD

2014: Invited Speaker: Joint Satellite Symposium at SGI 2014, Preterm Birth International Collaborative (PREBIC) and Myometrium/Parturition Symposium, Preterm Labor: A Polymicrobial Disease?, Florence, Italy

2013: Invited Speaker: Big City Seminars, San Francisco & San Diego, CA
2013: Invited Speaker: American Society of Reproductive Immunology Annual Meeting, Boston, MA

2013: Invited Speaker: Advanced Reproductive Medical Treatments, Rome, Italy

2013: Invited Speaker: 8th International Workshop on HIV Transmission: Principles of Intervention Workshop, Immunology of the Female Reproductive Tract, Barcelona, Spain

2013: Invited Speaker: 8th Collaborative Team Meeting, Role of Toll-Like Receptors in trophoblast immune regulation, Rockville, MD,

2013: Invited Speaker: Chinese Academy of Science, Beijing, China

2013: Invited Speaker: WIP Research Conference, Magee-Womens Research Institute, Pittsburgh, Pa

2012: Invited Speaker: American Society of Reproductive Immunology Annual Meeting, Boston, MA

2012: Invited Speaker: V SLIMP- Latin American Society for Maternal Fetal Interaction and Placenta, Viral Infection and Pregnancy and Trophoblast Immune Interactions. Sao Paulo, Brazil

2012: Invited Speaker: Multigene Conference, Biomarkers for Ovarian Cancer, Hong Kong, China

2012: Invited Speaker: Grand Rounds, University of Minnesota, Ovarian cancer stem cells: Source of recurrence and metastasis, Minneapolis, MN

2012: Invited Speaker: Grand Rounds, University of Nebraska, Is ovarian cancer a single disease? Implications for treatment and diagnosis, Omaha, Nebraska

2012: Invited Speaker: Program in Reproductive Sciences (PiRS) Series, University of Colorado, Inflammation and Pregnancy: The Good and the Bad, Denver, CO

2012: Invited Speaker: P4H International Summit on Personalized Health, Is ovarian cancer a single disease: Implications for treatment and diagnosis, Tel Aviv, Israel.

2011: Invited Speaker: Collaborative Academic Program between Second Affiliated Hospital of Xi’an Jiaotong University and Yale University, Cancer Stem Cells, Xi’an, China.

2011: Invited Speaker: University of Magdeburg, The Role of Macrophages in Pregnancy, Magdeburg, Germany
2011: Invited Speaker: A Marcus Wallenberg International Symposium in Comparative Reproductive Immunology, Linkoping University, Inflammation and implantation: the role of dentritic cells, Stockholm, Sweden

2011: Invited Speaker: 5th Meeting of the Collaborative Team on Interdisciplinary Research on Blastocyst Implantation – NIH, Inflammation and Implantation, Rockville, MD

2011: Invited Speaker: American Society of Reproductive Immunology, Ovarian Cancer Stem Cells, Salt Lake City, Utah.

2011: Invited Speaker: The Greenberg Conference, Inhibition of MIF Induces Death of Human Epithelial Ovarian Cancer Cells, Greenberg Conference Center, New Haven, CT.

2011: Invited Speaker: Grand Rounds Program, Stony Brook University Medical Center, Toll-Like Receptors in Pregnancy, Stony Brook, New York.

2010: Invited Speaker: Second International Conference on Reproductive Immunology, Inflammation and Pregnancy: The Good and the Bad, Shanghai, China.


2010: Invited Speaker: 4th Meeting of the Collaborative Team on Interdisciplinary Research on Blastocyst Implantation – NIH. Inflammation and Implantation, Rockville, MD


2010: Invited Speaker: International Congress of Reproductive Immunology, Trophoblast Cells as Immune Modulators in Pregnancy, Cairns, Australia


2010: Invited Speaker: NICHD Reproductive Sciences. Function of Toll-Like Receptors throughout Gestation, Rockville, MD


2009: Invited Speaker: European meeting of Obstetrics and Gynecology Krakow Poland.
2009: Invited Speaker: Nankai University. (Two seminars) Ovarian cancer stem cells and chemoresistance. Early detection of ovarian cancer. Nankai, China


2008: Invited Speaker: ICMRS. Ovarian cancer stem cells. Wellington, New Zealand

2008: Invited Speaker: Radcliff Institute for Advanced Study. Inflammation in male and female Cardiovascular Disease. Cambridge, MA.


2007: Invited Speaker: V International Meeting of Obstetrics and Gynecology. Immunology of Pregnancy. Valparaiso, Chile


2007: Invited Speaker: Annual Meeting of the American Society for Reproductive Immunology. TLRs and Pregnancy. Toronto, Canada


2006: Invited Speaker: 13th Postgraduate Course "Recent Advances in Perinatal Medicine". Erice, Italy

2006: Invited Speaker: Oncology Group. Advantages of Early Detection of Ovarian Cancer. Tel Aviv, Israel

2006: Invited Speaker: School of Medicine. Symposium on Immunology of Pregnancy. **Inflammation and pregnancy: the role of Toll Like Receptors.** West Virginia University


2006: Invited Speaker: Array BioPharma’s. **Inflammation and Cancer.** Denver, Colorado

2006: Invited Speaker: **Apoptosis and Cancer.** Wilkes-Barre University, Wilkes-Barre, PA

2005: Invited Speaker: International Meeting of Gynecology. **Early Detection and Ovarian Cancer.** Medellin, Colombia

2005: Invited Speaker: International Meeting of Gynecology. **Immunology of Implantation.** Medellin, Colombia

2005: Invited Speaker: International Meeting of Gynecology. **Cancer Progression and Inflammation.** Medellin, Colombia

2005: Invited Speaker: **Inflammation and Cancer.** Vaccination, Infection & Autoimmunity: Myth & Reality-VIAMR. Lausanne, Switzerland

2005: Invited Speaker: 11th World Congress of Menopause. **Early detection in Cancer.** Buenos Aires, Argentina

2005: Invited Speaker: 11th World Congress of Menopause. **Inflammation and Ovarian Cancer Progression.** Buenos Aires, Argentina


2005: Invited Speaker: Department of Physiology, Dartmouth University. New Concepts in Reproductive Immunology. Hanover, NH


2005: Invited Speaker: Immunology of Implantation. Humboldt University Berlin Germany

2005: Invited Speaker: Perinatal Research Branch, NICHD, NIH. Toll Like Receptors and Implantation. Detroit, MI


2004: Invited Speaker: Sex Hormones and the Immune System. 2nd World Congress on Women Mental Health. Washington DC


2004: Invited Speaker. International Meeting of Menopause. **Sex Hormones and the Immune System.** Lima, Peru

2004: Invited Speaker: International Meeting of Menopause. **Apoptosis and the Ovary.** Lima, Peru

2003: Invited Speaker: Weizmann Institute of Science. **Apoptosis and Cancer.** Rehovot, Israel

2003: Invited Speaker: Jornadas Nacionales de Climaterio. **Sex Hormones and the Immune System.** Salta, Argentina


2003: Invited Speaker: **Apoptosis and Cancer.** Northwestern University, Chicago

2003: Invited Speaker: **Immunology of Implantation.** Northwestern University, Chicago


2003: Invited Speaker: **Monocytes and implantation.** PRB, NIH.

2002: Invited Speaker: DOD Breast cancer Training Program. **Life after death? Survival by Apoptosis in Reproductive Tissues.** Fox Chase Cancer Center, Philadelphia, PA

2002: Invited Speaker: 3rd Annual Conference on Sex and Gene Expression. **Sex hormones and the Immune system.** The Hayes Mansion Conference Center, San Jose, California

2001: Invited Speaker: Scientific Advisory Meeting: Sex Differences in Immunology and Autoimmunity. **Estrogen, macrophages and the Fas/FasL system: Understanding the Biology of Sex Differences.** Boston, MA

2001: Invited Speaker: International Menopause Day. **Apoptosis and Cancer.** Santiago, Chile

2001: Invited Speaker: International Menopause Day. **Sex Hormones and the Immune System: Cancer and Autoimmunity.** Santiago, Chile

2001: Invited Speaker: 4th International Symposium Women’s Health and Menopause. **Sex hormones and the immune system: implications for menopause and autoimmunity.** Washington, DC

2001: Invited Speaker: Estrogen receptors $\alpha$ and $\beta$ in reproductive tissues. Menopause Society. Asuncion, Paraguay


2001: Invited Speaker: Perinatology Research Branch, Intramural Division, NICHD: *Immunology of implantation*. Detroit, MI


2000: Invited Speaker: Menopause Society. *Autoimmune diseases and Hormone Replacement Therapy*. Santiago, Chile

2000: Invited Speaker: Menopause Society. *Estrogen receptors $\alpha$ and $\beta$ in reproductive tissues*. Santiago, Chile

2000: Invited Speaker: Menopause Society. *Immunology of Gynecologic Cancers*. Santiago, Chile


1999: Invited Speaker: Annual meeting of the American Society of Reproductive Immunology. *Fas/Fas Ligand system in tumor-immune cells interaction*. New York, NY

At Yale
- Yale Cancer Center, Developmental Therapeutics Research Program: Targeting the Ovarian Cancer Stem Cells to Prevent Recurrence, November 2016

- Ellen Read Leeds Sturges Memorial Lecture, Yale School of Medicine: The Origin of Ovarian Cancer and Cancer Stem Cells as the Source of Chemoresistance and Recurrence, October 2015

- 26th Annual Ella T. Grasso Memorial Conference: Ovarian Cancer Stem Cells, November 2010

- Grand Rounds Yale Cancer Center: Ovarian Cancer Stem cells: Recurrence and Chemoresistance, February 2010

- Grand Rounds Obstetrics & Gynecology: Characterization and Identification of Ovarian Cancer Stem Cells, November 2009

- Grand Rounds Pathology: Ovarian Cancer Stem cells: Source of Recurrence and Chemoresistance, April 2009

- Grand Rounds Yale Cancer Center: Biomarkers for the Early Detection of Ovarian Cancer, June 2007

Yale Cancer Center: Developmental and Therapeutics Research Program: TLRs, Inflammation and Cancer, January 2006


- Yale Cancer Center, Therapeutic Radiology Lectures: Inflammation and Cancer, 2006

- Grand Rounds Department of Obstetrics and Gynecology: Serum Protein Markers for Early Detection of Ovarian Cancer, 2006

- Ovarian Cancer Research Program: Serum Protein Markers for Early Detection of Ovarian Cancer, 2005

- Pharmacology: Apoptosis and Cancer, 2004

- Immunobiology Seminar Series Lectures: A lethal talk: Fas-FasL in Tumor Immune cells Interaction, 1999


- Gynecologic Oncology Residents’ Lecture: Apoptosis and Cancer, 2001
• Grand Rounds Yale Cancer Center: Life after death? Survival by Apoptosis in Reproductive Tissues, 2002

• Grand Rounds Pathology: Apoptosis and Cancer, 2003