

Adolfo Garcia-Ocana PhD
Professor of Medicine
Diabetes, Obesity and Metabolism Institute
Icahn School of Medicine at Mount Sinai
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 212-241 9793

CITIZENSHIP: US and Spain citizenship

ACADEMIC APPOINTMENTS:

- 2001-2007 Assistant Professor of Medicine, Division of Endocrinology, University of Pittsburgh, Pittsburgh, PA
- 2003-2007 Assistant Professor of Cell Biology and Physiology, Dept. of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA
- 2007-2012 Associate Professor of Medicine with Tenure, Division of Endocrinology, University of Pittsburgh, Pittsburgh, PA
- 2007-2012 Associate Professor of Cell Biology and Physiology, Dept. of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA
- 2012- Professor of Medicine with Tenure, Division of Endocrinology and Bone Diseases, Diabetes Obesity and Metabolism Institute, Mount Sinai School of Medicine, NY
- 2012- Professor of Medicine, The Mindich Child Health & Development Institute at Mount Sinai Medical Center, NY
- 2015- Core Director, Human Islet & Adenovirus Core (HIAC) at the Albert Einstein-Mount Sinai Diabetes Research Center (ES-DRC).
<https://www.einstein.yu.edu/centers/diabetes-research/human-islet-and-adenovirus-core/>

Primary Appointment

Professor, Department of Medicine, Division of Endocrinology and Bone Diseases, Icahn School of Medicine at Mount Sinai, NY, NY

Secondary Appointments

None

HOSPITAL APPOINTMENTS: N/A

GAPS IN EMPLOYMENT: None

EDUCATION

- 1982-87 B.S. Universidad Autonoma of Madrid, Madrid, Spain
- 1989-94 Ph.D. Student, Metabolic Research Lab, Jimenez Diaz Hospital, Universidad Autonoma of Madrid, Madrid, Spain; and, Dept. of Renal Physiology, Faculté de Medecine Xavier Bichat, Université Paris VII, Paris, France
- 1994 Ph.D. Dept. of Biochemistry and Molecular Biology, Universidad Autonoma of Madrid, Madrid, Spain
- 1994-96 Postdoctoral Fellow, Metabolic Research Lab, Jimenez Diaz Hospital, Universidad Autonoma of Madrid, Madrid, Spain
- 1995-96 Master in Computing Analysis and Programing: Methodology, Structured Analysis, Operative Systems and Programming Languages. Tajamar Innovative Technologies Institute, Madrid, Spain.
- 1996-98 Postdoctoral Fellow, Division of Endocrinology, Yale University, New Haven, CT
- 1998-01 Research Associate, Division of Endocrinology, University of Pittsburgh, Pittsburgh, PA

LICENSURES AND CERTIFICATIONS: N/A

HONORS & AWARDS

Fellowships and Awards

- 1989-92 Graduate Student Research Fellowship from Jimenez Diaz Foundation, Universidad Autonoma of Madrid, Madrid, Spain
- 1991 Young Investigator Award, European Renal Association-Dialysis and Transplant Association
- 1993-94 Research Fellowship for Studies Abroad from Jimenez Diaz Foundation, Universidad Autonoma of Madrid, Madrid, Spain. Host Academic Institution: Unité de Recherche Inserm 251 "Physiologie du tube rénal", Bichat Hospital, Paris VII University, Paris, France
- 1994 Thesis Dissertation: Summa cum Laude
- 1995-96 Fellowship from the Alfonso Martin Escudero Foundation, Madrid, Spain, Master in Computing Analysis and Programming.
- 1997 FAES Award on Mineral Metabolic Research, Spanish Society of Bone and Mineral Research
- 1996-98 Postdoctoral Fellowship from the North Atlantic Treaty Organization (NATO), Brussels, Belgium
- 2002-04 Junior Faculty Award, American Diabetes Association
- 2004 Senior Vice Chancellor's Research Conference Award at the University of Pittsburgh
- 2009 Tenure, University of Pittsburgh
- 2012 Tenure, Icahn School of Medicine at Mount Sinai
- 2015 Director, Human Islet and Adenovirus Core, Icahn School of Medicine at Mount Sinai

Invitation and Organization of Meetings

- 2005 Invited Symposium Speaker, 6th Rachmiel Levine Symposium, City of Hope National Medical Center, City of Hope, CA
- 2006 Invited Symposium Speaker, 48th Meeting of the Spanish Society of Endocrinology and Nutrition. Seville, Spain
- 2006 Invited Symposium Speaker, 1st European Renal Association-Dialysis and Transplant Association, Spanish Research Council and Queen Sofia Institute for Renal Research Symposium. Madrid, Spain
- 2008 Invited Symposium Speaker, 8th Rachmiel Levine Symposium, City of Hope National Medical Center, City of Hope, CA
- 2009 Invited Symposium Speaker, 20th Spanish Society of Diabetes Annual Meeting, Tenerife, Spain
- 2009 Chair of the Session "Islet β -Cell Growth"; 2nd Midwest Islet Club Meeting (St. Louis, MO).
- 2009 Chair of the Session "Recent Advances in the Regulation of Beta Cell Mass" of the American Diabetes Association 69th Meeting in New Orleans, LA.
- 2009 Chair of the Symposium "Novel Insights into Islet Cell Dysfunction" of The Endocrine Society Meeting in Washington, DC.
- 2010 Chair of the Session "Islet β -Cell Growth"; 3rd Midwest Islet Club Meeting, Indianapolis, IN.
- 2010 Chair of the Symposium "Beta Cell Failure-The Key to Unlocking Type 2 Diabetes Mellitus" of the American Diabetes Association 70th Meeting in Orlando, FL.
- 2010 Invited Symposium Speaker, The Endocrine Society Annual Meeting, San Diego, CA
- 2010 Invited Symposium Speaker, American Diabetes Association 70th Meeting, Orlando, FL
- 2010 Invited Symposium Speaker, JDRF-Broad-Sanofi-Aventis, Broad Institute-Harvard University, Cambridge, MA
- 2011 Invited Symposium Speaker, 2nd Annual Sanford Health Type 1 Diabetes Symposium, Sanford Health, Sanford USD Medical Center, Sioux Falls, SD
- 2014 Invited Symposium Speaker, Keystone Symposium on Emerging Concepts and Targets in Islet Biology, Keystone, CO
- 2016 Chair of the Session "Impact of Intrauterine Environment on Beta Cell Dysfunction and Diabetes" of the American Diabetes Association 76th Scientific Sessions in New Orleans, LA.
- 2017 Chair of the Session "Milestones in the life of a beta cell" of the American Diabetes

Association 77th Scientific Sessions in San Diego, CA.

- 2018 Chair of the Symposium “Roads to Beta Cell Failure in Type 2 Diabetes” of The Endocrine Society Meeting in Chicago, IL
- 2018 Chair of the Session “Beta-Cell Development and Postnatal Growth” of the American Diabetes Association 78th Scientific Sessions in Orlando, FL.

Invited Committees

- 2007-15 Research Grant Review Committee Member, American Diabetes Association
- 2010-12 Member of the Midwest Islet Club Organizing Committee
- 2012 Chair Organizing Committee of the 5th MIC Annual Meeting, Midwest Islet Club, Pittsburgh.
- 2013-15 American Diabetes Association Annual Meeting 2014-2016, Organizing Subcommittee on Islet Biology.
- 2015- Admissions Committee for the Master's in Biomedical Sciences Program and the MD/PhD Program at Mount Sinai.
- 2016 Chair Organizing Committee of the 5th Annual NYC Regional Diabetes Meeting, NY.
- 2016-18 Co-Chair of the American Diabetes Association's Scientific Sessions Meeting Planning Committee in the area of Islet Biology/Insulin Secretion.
- 2017 Child Health Research Day Steering Committee, The Mindich Institute, Icahn School of Medicine at Mount Sinai, April 2017.

PATENTS:

- ! Provisional patent application: Kinase inhibitor compounds and compositions and methods of use. Docket no. 29539.0750 (170973). Inventors: DeVita, Stewart, Kumal, Wang, Sanchez, and Garcia-Ocana.

OTHER PROFESSIONAL APPOINTMENTS

- 1997- Member, The Endocrine Society
- 1999- Member, American Diabetes Association
- 1997- Member, American Physiological Society
- 2008 Ad Hoc Member, Beta Cell Regeneration and Beta Cell Imaging Study Sections, JDRF
- 2009- Ad Hoc Member, Cellular Aspects of Diabetes and Obesity Study Section, NIH
- 2010- Member, American Association for the Advancement of Science,
- 2013-14 Grant Reviewer for the Helmsley Trust Breakthrough Therapeutics Initiative
- 2013- Scientific Review Committee of the Diabetes Research Connection (DRC) Funding Agency
- 2018-22 Standing Member, Molecular and Cellular Endocrinology (MCE) Study Section, NIH.

EDITORIAL POSITIONS

- Editorial Boards: *Endocrinology*, 2001-2004.
American Journal of Physiology, Endocrinology and Metabolism, 2012-
Journal of Biological Chemistry, 2014-
Journal of Diabetes and its Complication, 2016-
Cardiovascular Drugs and Therapy, 2017-
Diabetes, 2019-

RESEARCH PROFILE

Dr. Garcia-Ocana's research interest has focused over the years on regeneration, growth factors and intracellular signaling. After coming to the United States with a NATO postdoctoral fellowship in 1996, he studied, under the guidance of his mentor, Dr. Andrew Stewart, the potential of growth factors for pancreatic beta cell regeneration in diabetes. Together, they described for the first time that expression of hepatocyte growth factor (HGF) in vivo in beta cells markedly increases beta cell proliferation, mass and function in transgenic mice. In addition, the team Stewart/Garcia-Ocana also demonstrated, for the first time, the beneficial effects of HGF on improving islet transplant

outcomes. These novel results highlighted the potential of growth factors, and in particular HGF, for beta cell regeneration and islet transplantation in diabetes.

As an independent and funded investigator, he went on identifying the intracellular signaling pathways involved in the beneficial effects of HGF in beta cells. He found that the Akt signaling pathway was required for the anti-apoptotic effects of HGF and that activation of this pathway was enough to improve long-term human islet transplantation in mice without adverse effects. He also found a key and novel signaling pathway involved in growth factor- and nutrient-induced beta cell replication: the atypical protein kinase C (PKC) ζ . Activation of this pathway leads to markedly increased rodent beta cell expansion and more importantly human beta cell replication, highlighting this pathway as an attractive target for beta cell regeneration therapy. Recently, he has also centered his interest on the physiological role of HGF and PKC ζ in the beta cell. Using genetically-modified mouse models, he has shown that the absence of HGF action in beta cells leads to the development of gestational diabetes in mice. These studies open the door to important translational studies in pregnant women with gestational diabetes, an aspect currently being explored by Dr. Garcia-Ocana.

At present, he is also involved in deciphering the role of a downstream target of PKC ζ , the Specificity Protein 1 (SP1) in beta cell growth and function, a key molecule completely understudied in the beta cell. He is also screening molecules that can perform the double task of inducing immune tolerance while protecting the pancreatic beta cell for the treatment of type 1 diabetes. He is also searching for compounds that can enhance the proliferation of beta cells and at the same time reverse beta cell de-differentiation, both aspects highly needed for the treatment of type 2 diabetes. Finally, he is also serving as Core Director of the Human Islet and Adenovirus Core of the NIH-funded Einstein-Mount Sinai Diabetes Research Center.

In terms of collaborations, he is presently performing NIH-, ADA- and JDRF-funded collaborative studies with researchers from different Institutions around the country including Henry Dong (University of Pittsburgh), Nika Danial (Dana Farber, Harvard), Jeff Pessin (Albert Einstein), Anthony Sauve (Cornell) and internally with Andrew F Stewart, Rupangi Vasavada, Dirk Homann, Robert DeVita and Donald K Scott, as reflected in his grant funding. In summary, he is using the latest technologies (HTS, Genomics, Proteomics and Metabolomics) and basic science knowledge to uncover and translate significant findings into potential safe and innovative therapies for the treatment of diabetes.

CLINICAL PROFILE: N/A

IMPACT

Please see the preceding sections.

GRANTS, CONTRACTS, FOUNDATION SUPPORT

List Funding Source, Project title & Number	Role in Project	Dates	Supplemental Info
NIH/NIDDK R01DK113079 "Dextran Sulfate, Beta Cell Preservation and Immune Regulation in Type 1 Diabetes"	PI (Homann Co-PI)	4/1/17– 3/31/21	This application will address the potential role of dextran sulfate for beta cell survival and immune modulation in mice. It will also explore the preventive and therapeutic potential of dextran sulfate for type 1 diabetes.
NIH/NIDDK R01 DK015015 "Dyrk Inhibitors for Human Beta Cell Expansion"	PI (Stewart, DeVita Co- PIs)	04/01/16- 03/31/20	This application explores the therapeutic potential of Dyrk inhibitors to increase human beta cell replication in vitro and in vivo.
NIH/NIDDK P30 DK020541-38 Albert Einstein College of Medicine of Yeshiva University-Mount Sinai School of Medicine Diabetes Research Center (DRC). Human Islet and Adenovirus Core (HIAC)	Site PI Core Director	04/01/15- 03/31/20	The HIAC will provide training and hands on human islets, isolated rodent islets, islet transplantation approaches and adenovirus and lentivirus for transduction of these islets.

Department of Defense W81XWH-17-1-0363 "Dextran Sulfate and human immune regulation in Type 1 diabetes"	PI (Homann Co-PI)	08/01/-17 07/31/20	This grant sought to analyze the effect of dextran sulfate in human PBMCs from control and type 1 diabetic subjects by using Cytof technology.
Juvenile Diabetes Research Foundation Research Grant, 2-SRA- 2017-514-S-B Combined harmalog-TGF beta inhibitors for human beta cell expansion	PI (Stewart Co-PI)	09/01/17-08/31/19	This application will explore the combine effect of harmine and TGF beta inhibitors in beta cell proliferation.
NIH/NIDDK R01 DK116904 Novel Selective Type II kinase Inhibitors to treat Diabetes.	Co-I (Stewart, DeVita Co-PIs)	4/01/18– 2/28/23	This application explores the therapeutic potential of Selective Type II Dyrk inhibitors to increase human beta cell replication in vitro and in vivo.
NIH/NIDDK R01 DK110156 ChREBP Alpha, Keap1- Nrf2 and Glucose- stimulated Beta cell Proliferation	Co-I (Scott PI)	4/1/17– 3/31/21	The primary goal of this application is to analyze the epigenetic and metabolic changes in islets from young mice fed acutely or chronically. with standard diet or a high fat diet
NIH/NIDDK R01 DK102893 Osteoprotegerin and the Pancreatic Beta Cell	Co-I (Vasavada PI)	4/1/15– 1/31/19	The primary goals of this application are to analyze the therapeutic, physiologic, and mechanistic role of OPG in the beta cell.
Pending Grants.			
NIH/NIDDK P01 Nutrient Regulation of Beta-Cell Growth and Replication (NuBeta)	PI (Project 2; Scott Co-PI)	2/1/19-1/31/24	This Research Project will explore the importance of Myc for integrating multiple nutrient and growth factor signals and for coordinating downstream response pathways leading to adaptive β -cell expansion.
Department of Defense Research grant The gut-islet axis - defining regulation of alpha-cell proglucagon processing for the treatment of diabetes	Co-I, Cummings, PI	9/1/19-8/31/22	We propose to use state-of-the-art murine bariatric modeling, genetically modified mice and groundbreaking use of single cell genomic techniques to define how bariatric surgery corrects islet dysfunction.
Previous Grant Support (Last three years)			
American Diabetes Association "Dextran Sulfate in beta cell regeneration and protection for Type 1 diabetes"	PI	01/01/-14 12/31/16	This grant sought to analyze the effect of dextran sulfate in preventing and reversing type I diabetes and the mechanisms involved in these effects.

NIH/NIDDK R-01-DK 067351 "Hepatocyte Growth Factor and the pancreatic beta cell"	PI	06/01/04-05/31/15	This application explores the role of HGF/c-met and p53 in obesity-induced type 2 diabetes.
Juvenile Diabetes Research Foundation, Research Grant 17-2011- 595 "Improving beta cell survival and function by harnessing the benefits of BAD-GK partnership"	Co-PI	9/01/11 - 2/28/15	The primary goal of this application is to analyze the in vitro and in vivo therapeutic potential BAD mimetics in human beta cell survival.

CLINICAL TRIALS PARTICIPATION: None.

TRAINEES

Trainee	Trainee Type	Dates of Training	Trainee Institution	Topic of Study	Position today
Maria A. Martinez-Brocca	MD fellow	2001, 2006	University of Seville, Spain, MD 2006	HGF-mediated increase in glucose transport in skeletal muscle	Asst. Professor, Univ. of Seville, Spain
Nathalie Fiaschi-Taesch	Postdoc	2002-2004	Universite Louis Pasteur, Strasbourg, France, PhD, 2000	PTHrP and HGF in renal ischemia and reperfusion in transgenic mouse models	Associate Professor, Mount Sinai School of Medicine
Poornima Rao	MD fellow	2002-2004	"People's Friendship" University Medical Faculty, Russia, MD 1995	Akt activation and human islet transplantation	Internist, Endocrinologist, Allegheny Hospital, Pittsburgh.
Jose A. Gonzalez-Pertusa	Postdoc	2005-2006	University of Elche, Spain, PhD, 2004	Glucolipototoxicity and beta cell death	Asst. Professor, Univ. of Seville, Spain
Laura C. Alonso	MD fellow/ Postdoc	2005-2009	U. Penn School of Medicine, MD, 1997	Glucose-induced beta cell proliferation	Associate Professor, U Mass
Jose M. Mellado-Gil	Postdoc	2006-2009	Univ. of Cadiz, Spain, PhD, 2009	c-met deficiency in Type I diabetes	Senior Researcher, CABIMER-Andalusian Center for Molecular Biology and Regenerative Medicine, Seville, Spain
Raquel Guerrero-Navarro	MD fellow	2007	University of Seville, MD, 2004	HGF and islet vascularization	Asst. Professor, Univ. of Seville, Spain
Cem Demirci	MD fellow	2007-2009	University of Istanbul, Medical School at Cerrahpasa, Turkey, MD, 1991	Gestational diabetes and the pancreatic beta cell	Assistant Professor, Pediatrics, University of Connecticut, CT
Taylor Rosa	BSc	2007-2009	University of Pittsburgh, 2009	HGF and IRS2 deficiency in beta cells.	Graduate Student, PhD program Duke
Silvia Velazquez-Garcia	Postdoc	2008-2011	Univ. of La Laguna, Canary Islands, Spain, Ph, 2008	Protein kinase C Zeta and the pancreatic beta cell	Postdoctoral Fellow, University of Geneva, Switzerland

Sara Ernst	Postdoc	2008-2011	Baylor College of Medicine, PhD, 2008	Beta cell regeneration and c-met	MD Student University of Pittsburgh Medical School
Tonslyn Toure	MD fellow	2009-2010	Brown University/Alpert Medical School, MD, 2005	Protein kinase C Zeta and the pancreatic beta cell	Private Practice, Diabetes, Metabolism & Endocrinology, Boston, MA
Shelley Valle	BSc	2009-2011	University of Pittsburgh, 2011	Dextran sulfate for Type I diabetes	Graduate Student, PhD program University of Arizona
Juan.C. Alvarez-Perez	Postdoc	2011-2017	University of Santiago, PhD, 2011	p53, glucolipototoxicity, beta cell and obesity/type 2 diabetes	Assistant Professor, University of Granada, Spain
Francisco Rausell-Palamos	Postdoc	2013-2016	University of Valencia, PhD, 2011	Islet transplantation and type I diabetes	Instructor, High School, Spain
Carolina Rosselot	Research Associate	2013-	University of Buenos Aires, PhD, 2005	Transcriptional regulation of beta cell proliferation	Research Assistant, Mount Sinai School of Medicine
Diana Wang	MS Student	2013-2014	Cornell, BS, 2013	HTS for finding activators of PKC Zeta expression	MD Student, University of Philadelphia
Matthew P. Spindler	MS Student	2014-2015	Princeton, BS, 2013	Immune modulation by dextran sulfate and other polysaccharides	MD/PhD Student, Mount Sinai School of Medicine
Kelly Hyles	HS Student	2015-2016	HS for Math, Science and Engineering, 2016	Protein kinase C Zeta and the pancreatic beta cell	Student, Harvard University
Anna Kalis	HS Student	2016-2017	HS for Math, Science and Engineering, 2017	Transcriptional regulation of beta cell proliferation	Student, University of Michigan
Geming Lu	Postdoc	2017-	Precision Immunology Institute of the Icahn School of Medicine at Mount Sinai	Type 1 diabetes and immune tolerance	Postdoctoral Fellow, Mount Sinai School of Medicine
Cecilia Berrouet	BSc	2017-	Cornell, BS, 2016	Epigenetic regulation of beta cell proliferation	BSc, Research Assistant
Jessica Wilson	BSc	2017-	Miami University, Oxford, OH, BS, 2014	Harmine-based therapies for beta cell regeneration	BSc, Research Assistant
Viktor Zlatnik	MS Student	2017-2018	Dartmouth, BS, 2016	Harmalogs and beta cell regeneration	MS Student
Zihan Zhang	BSc	2017-2018	UNC, BS, 2017	CyTOF-based analysis of immune cell populations in type 1 diabetes	BSc, Research Assistant
Kadeem Whyte	HS Student	2017-2018	HS for Math, Science and Engineering, 2018	Specificity Protein 1 and the pancreatic beta cell	Student, Cornell University
Diego Rodriguez	HS Student	2018-2019	HS for Math, Science and Engineering, 2019	Harmine and GLP-1	CEYE Student

TEACHING ACTIVITIES

			Number	Number of hours	Years
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Teaching Activity/Topic	Level	Role	of Learners	per week/month/year	Taught
<i>Class: Introduction to Core Research Techniques for MD fellows.</i>	<i>MD Fellows</i>	<i>Lecturer</i>	<i>8/year</i>	<i>3 hrs/year</i>	<i>2001-2007</i>
<i>Class: Molecular Pathobiology Course</i>	<i>MD and PhD Students</i>	<i>Lecturer</i>	<i>10</i>	<i>3hrs</i>	<i>2003</i>
<i>Class: Transgenic Animal Course: Of Mice, Zebrafish and Men: If Steinbeck had been a Clinician.</i>	<i>MD and PhD Students, Fellows and Faculty</i>	<i>Lecturer</i>	<i>20</i>	<i>3hrs</i>	<i>2005</i>
<i>Course: "Research Basis of Medical Knowledge,"</i>	<i>MD/PhD Students</i>	<i>Class Mentor</i>	<i>10</i>	<i>3hrs</i>	<i>2009</i>
<i>PBL. Course: Fuel Metabolism</i>	<i>MD Students</i>	<i>Lecturer</i>	<i>9/year</i>	<i>9 hrs/year</i>	<i>2008-2012</i>
<i>Course: Systems Biomedicine. Module 2: Diabetes. Class "Non-Insulin Metabolic Hormones and Signaling: Incretins, Leptin and Other Metabolic Hormones"</i>	<i>MD, PhD, MD/PhD and MS Students</i>	<i>Lecturer</i>	<i>20/year</i>	<i>2 hrs/year</i>	<i>2013-2015</i>
<i>Course: Systems Biomedicine. Module 2: Diabetes. Class "Pancreatic Beta Cell Regeneration & Protection"</i>	<i>MD, PhD, MD/PhD and MS Students</i>	<i>Lecturer</i>	<i>20/year</i>	<i>2 hrs/year</i>	<i>2016-2018</i>

ADMINISTRATIVE LEADERSHIP APPOINTMENTS:

Endocrine Research Conference Organizer, Division of Endocrinology, University of Pittsburgh, 2003-2004

Member, Basic Research Faculty Committee, Division of Endocrinology, University of Pittsburgh, 2007-2012

Member, Organizing Committee of the Division of Endocrinology Research Retreat, 2007-2009

Member of the Under Represented Minority (URM) Focus Group of the Department of Medicine, University of Pittsburgh, 2007-2012

Experts Panel on Human Islet Isolation and Counting, Workshop held by the NIH/JDRF Human Islet Cell Resource Centers, San Francisco, CA, 2008

Abstract Reviewer, American Diabetes Association Scientific Sessions, 2008-2016

Abstract Reviewer, The Endocrine Society Scientific Sessions, 2009-2010

Member, Presidential Poster Competition, The Endocrine Society Annual Meeting, 2009-2010

American Diabetes Association Awards Selection Committee, 2007-2011

Member, American Diabetes Association Grant Review Committee, 2007-2015

Member, Midwest Islet Club Meeting Organizing Committee, 2010-2012

Organizer and Chair, 5th Midwest Islet Club Meeting in Pittsburgh, 2012

ADA Annual Meeting, Organizing Subcommittee on Islet Biology, 2013-2016

Core Director, DRC Albert Einstein-Mount Sinai 2015-2020

Member, Admissions Committee for the Master's in Biomedical Sciences Program at Mount Sinai, 2015-

Organizer and Chair, 5th Annual NYC Regional Diabetes Meeting, NY, 2016.

Member of the steering committee for the Nineteenth Annual Child Health Research Day to be held on April 20th, 2017, Icahn School of Medicine at Mount Sinai.

Organizer of the Work in Progress Conference, Diabetes, Obesity and Metabolism Institute, Icahn

School of Medicine at Mount Sinai, 2017.

Co-Chair of the American Diabetes Association's Scientific Sessions Meeting Planning Committee in the area of Islet Biology/Insulin Secretion, 2016-2018.

PUBLICATIONS

Adolfo Garcia-Ocaña <https://scinapse.io/authors/289896743>

98 Publications, 40 H-index, 4,198 Citations

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. F. Manzano, P. Esbrit, A. García-Ocaña, R. García-Cañero, M.A. Jiménez. Partial purification and characterisation of a renal growth factor from plasma of uninephrectomised rats. ***Nephrol. Dial. Transplant.*** 4:334-338, 1989.
2. P. Esbrit, A. García-Ocaña, R. García-Cañero, F. Manzano, MA Jiménez-Clavero. Biological properties of a renotropic protein present in plasma of uninephrectomized rats. ***Ren Physiol Biochem.*** 14:224-35, 1991.
3. A. García-Ocaña, P. Esbrit. Role of kidney and liver in the renotropic activity generated in rats after uninephrectomy. ***Nephrol. Dial. Transplant.*** 7:608-612, 1992.
4. A. García-Ocaña, J. Ortega, Y. González-García, C. García-Cantón, P. Esbrit. Partial purification of a renotropic activity from plasma of uninephrectomized human subjects. ***Nephron*** 64:547-551, 1993.
5. A. García-Ocaña, P. Esbrit. Further studies on the characterization of a renotropic activity detected in uninephrectomized rat plasma. ***Exp Nephrol.*** 2:286-93, 1994.
6. A. García-Ocaña, F. de Miguel, C. Peñaranda, J.P. Albar, J.L. Sarasa, P. Esbrit. Parathyroid hormone-related protein is an autocrine modulator of rabbit proximal tubule cell growth. ***J. Bone Miner. Res.*** 10:1875-1884, 1995.
7. R. Perrichot, A. García-Ocaña, S. Couette, E. Comoy, C. Amiel, G. Friedlander. Locally formed dopamine modulates renal Na-Pi co-transport through DA₁ and DA₂ receptors. ***Biochem. J.*** 312:433-437, 1995.
8. C. Peñaranda, A. García-Ocaña, P. Esbrit. Hypertrophy of rabbit proximal tubule cells is associated with overexpression of TGFβ. ***Life Sci.*** 59:1773-1782, 1996.
9. A. García-Ocaña, C. Peñaranda, P. Esbrit. Comparison of antiproliferative effects of atrial natriuretic peptide and transforming growth factor beta on rabbit proximal tubule cells. ***Life Sci.*** 58:251-258, 1996.
10. A. García-Ocaña, C. Peñaranda, P. Esbrit. Transforming growth factor-beta and its receptors in rabbit renal proximal tubules after uninephrectomy. ***Exp Nephrol.*** 4:231-240, 1996.
11. A. Valín, A. García-Ocaña, F. de Miguel, J.L. Sarasa, P. Esbrit. Antiproliferative effect of the C-terminal region of parathyroid hormone-related protein on osteoblastic osteosarcoma cells. ***J. Cell Physiol.*** 170:209-215, 1997.
12. M.E. Martínez, A. García-Ocaña, M. Sánchez, S. Medina, T. del Campo, A. Valín, M.J. Sánchez-Cabezudo P. Esbrit. C-terminal parathyroid hormone-related protein inhibits proliferation and differentiation of human osteoblast-like cells. ***J. Bone Miner. Res.*** 12:778-785, 1997.
13. A. García-Ocaña, E. Gómez-Casero, C. Peñaranda, P. Esbrit. Parathyroid hormone-related protein increases DNA synthesis in rabbit proximal tubule cells by cyclic-AMP and protein kinase C dependent pathways. ***Life Sci.*** 62:2267-2274, 1998.
14. A. García-Ocaña, E. Gómez-Casero, C. Peñaranda, J.L. Sarasa, P. Esbrit. Cyclosporine increases renal parathyroid hormone-related protein expression in vivo in the rat. ***Transplantation*** 65: 860-863, 1998.
15. S.E. Porter, R.L. Sorenson, P. Dann, A. García-Ocaña, A.F. Stewart, R.C. Vasavada. Progressive pancreatic islet hyperplasia in the islet-targeted, PTH-related protein-overexpressing mouse. ***Endocrinology*** 139:3743-3751, 1998.
16. R. Vasavada, A. García-Ocaña, T. Massfelder, P. Dann, A.F. Stewart. Parathyroid hormone-related protein in the pancreatic islet and cardiovascular system. ***Recent Progress in Hormone Research*** 53:305-340, 1998.
17. A. García-Ocaña, S.C. Galbraith, S.K. Van Why, K. Yang, L. Golovyan, P. Dann, R.A. Zager, A.F. Stewart, N.J. Siegel, J.J. Orloff. Expression and role of parathyroid hormone-related

- protein in human renal proximal tubule cells during recovery from ATP depletion. *J. Am. Soc. Nephrol.* 10:238-244, 1999.
18. A. Valin, F. de Miguel, A. García-Ocaña, P. Esbrit. Parathyroid hormone-related protein (107-139) decreases alkaline phosphatase in osteoblastic osteosarcoma cells UMR 106 by a protein kinase C-dependent pathway. *Calcified Tissues.* 65:148-151, 1999.
 19. A. García-Ocaña, K. Takane, M. A. Syed, W.M. Philbrick, R.C. Vasavada, A.F. Stewart. Hepatocyte growth factor overexpression in the islet of transgenic mice increases beta cell proliferation and induces hypoglycemia. *J. Biol. Chem.* 275:1226-1232, 2000.
 20. R.C. Vasavada, A. García-Ocaña, W.S. Zawalich, R.L. Sorenson, P. Dann, M. Syed, L. Ogren, F. Talamantes, A.F. Stewart. Targeted expression of placental lactogen in the beta cells of transgenic mice results in beta cell proliferation, islet mass augmentation, and hypoglycemia. *J. Biol. Chem.* 275:15399-15406, 2000.
 21. P. Esbrit, J. Benitez-Verguizas, F. de Miguel, A. Valin, A. García-Ocaña. Characterization of parathyroid hormone/parathyroid hormone-related protein receptor and signaling in hypercalcemic Walker 256 tumor cells. *J. Endocrinol.* 166:11-20, 2000.
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104. K. Kumar, P.Wang, J. Wilson, V. Zlatanic, C. Berrouet, S. Khamrui, C. Secor, E.A. Swartz, M. Lazarus, R. Sanchez, A.F. Stewart, A. Garcia-Ocaña, R.J. DeVita. A novel, in-vivo active, harmine-based β -cell proliferative DYRK1A inhibitor as a potential therapeutic for diabetes. **Submitted**, 2019.
105. G. Lu, F. Rausell-Palamos, Z. Zhang, R.C Vasavada, Shelley Valle, Matthew Spindler, D. Homann and A. García-Ocana. Dextran Sulfate Ameliorates Type 1 Diabetes, pancreatic beta cell death and autoimmunity. **Submitted**, 2019.

MANUSCRIPTS IN VARIOUS STAGES OF PREPARATION:

1. C. Rosselot, G. Lu, A. Garcia-Ocaña. Specificity protein 1 regulates pancreatic beta cell replication and mass. (in preparation) 2019.

OTHER PUBLICATIONS

Book Chapters.

1. A. Garcia-Ocaña, R. Vasavada, K. Takane, F. de Miguel, A.F. Stewart. Parathyroid hormone-related protein. In: **Disorders of Bone and Mineral Metabolism**. F. Coe, and M. Favus Eds., 2nd edition. Lippincott, Williams & Wilkins, Philadelphia, PA pp 129-156, 2002.
2. R. C. Vasavada, A. Garcia-Ocaña, K. K. Takane, A. Cebrian, J.C. Lopez-Talavera, A.F. Stewart. Islet growth factors. In: **Type I Diabetes: Etiology and Treatment**. Sperling M.A. (Ed). Humana Press, Totowa, NJ. Pp 561-577, 2003.
3. A. Garcia-Ocaña, A.F. Stewart, and P.L. Herrera. Chapter 29: Cell Replacement Therapy for Diabetes. In: **Cell Therapy**. D. García-Olmo, J.M. García-Verdugo, J. Alemany, J. Gutiérrez-Fuentes, Eds. McGraw-Hill, 2008.
4. J.A. Gonzalez-Pertusa, L. Alonso, A. Garcia-Ocaña. Hepatocyte growth factor (HGF) and the pancreatic beta cell. In: **Islet Cell Growth Factors**. R. Kulkarni Ed., Landes Bioscience/Eureka, pp 85-101, 2011.

INVITED PRESENTATIONS

- 1996 "Different effects of parathyroid hormone-related protein in the growth of renal tubule cells and osteoblasts". Department of Internal Medicine, WHO Collaborating Center for Osteoporosis and Bone Disease, Cantonal Hospital, Geneva, Switzerland.
- 1997 "Role of parathyroid hormone-related protein in physiological and pathophysiological kidney growth". Department of Nephrology, Jimenez Diaz Foundation, Madrid, Spain.
- 1999 "Hepatocyte Growth Factor overexpression in the islet of transgenic mice". Endocrine Research Conference, Division of Endocrinology and Metabolism, University of Pittsburgh.
- 1999 "Overexpression of HGF in the pancreatic islet of transgenic mice". Pittsburgh Smooth Muscle Group Meeting, Pittsburgh, PA.
- 2001 "Transgenic and viral approaches to enhancing islet transplant survival". Young Investigators Meeting. Department of Medicine, University of Pittsburgh, Pittsburgh, PA.
- 2001 "Transgenic delivery of islet growth factors: Improving islet transplant outcomes". Endocrinology Conference, University of Seville, Seville, Spain.
- 2002 "Hepatocyte growth factor in pancreatic beta cell growth and function. Possible therapeutic implications". Endocrine Research Conference, Division of Endocrinology and Metabolism, University of Pittsburgh, Pittsburgh, PA.
- 2003 "Hepatocyte growth factor modulates growth and function of the pancreatic beta cell: A candidate for improving islet transplant outcomes". Cell Biology and Physiology Research Seminar, Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA.
- 2003 "Hepatocyte growth factor gene transfer improves islet transplantation". Pittsburgh Pancreas Project, Division of Gastroenterology, Department of Medicine, University of Pittsburgh, Pittsburgh, PA.
- 2004 "Unraveling the physiology and therapeutic potential of hepatocyte growth factor in the pancreatic beta cell". Senior Vice Chancellor's Research Seminar, University of Pittsburgh, Pittsburgh, PA.
- 2004 "Gene- and cell-based therapeutics for type I diabetes mellitus". CME Course: Genetics in renal transplantation held by EDTA/ERA (European Renal Association/European Dialysis and Transplant Association). Tenerife, Spain.
- 2004 "The future of islet transplantation: Ex vivo gene transfer of growth factors to improve the function and survival of islet grafts". Inaugural Conference of the Clinical Research Seminar Series for the Academic year 2004-2005, Canary Islands General University Hospital, Tenerife, Spain.
- 2005 "Hepatocyte growth factor (HGF) gene therapy for islet transplantation". 6th Annual Levine Symposium on "Advances in Diabetes Research: From Cell Biology to Cell Therapy," City of Hope National Medical Center, City of Hope, CA.
- 2005 "Clinical and transgenic approaches to beta cell biology and improving diabetes outcomes". Transgenic Animal Workshop: Of Mice, Zebrafish and Men: If Steinbeck had been a Clinician. Office of Research, Health Science, University of Pittsburgh, Pittsburgh, PA.
- 2005 "Unraveling the physiology and therapeutic potential of hepatocyte growth factor in the pancreatic beta cell". Division of Endocrinology, Diabetes and Metabolism, University of Vermont College of Medicine, Burlington, VT
- 2005 "Regulation of pancreatic beta cell growth and function by hepatocyte growth factor (HGF): Emerging insights and therapies". Newborn Medicine Grand Rounds, Magee-Women's Hospital, UPMC, Pittsburgh, PA.
- 2006 "A Journey from the Kidney to the Endocrine Pancreas: Growth Factors in Renal Failure and Diabetes". 1st International Meeting on Translational Research and Medicine. Jimenez Diaz Foundation. Madrid, Spain.
- 2006 "Hepatocyte growth factor/c-met signaling in beta cell growth and function: New emerging insights". Endocrine Research Conference, Division of Endocrinology and Metabolism, University of Pittsburgh, Pittsburgh, PA.
- 2006 "Hepatocyte growth factor/c-met signaling in beta cell growth and function". Diabetes Center Seminar Series, Vanderbilt University School of Medicine, Nashville, TN.
- 2006 "Growth factors and signaling in beta cell replication". 1st Symposium "Beta cell biology: Opportunities for translational research intervention for diabetes in the next decade". Dracena Bioresearch, Barcelona College of Physicians, Barcelona, Spain.
- 2006 "Using β -cell growth factors to enhance human pancreatic islet transplantation". 48th Meeting of the Spanish Society of Endocrinology and Nutrition. Seville, Spain.

- 2006 "Replication of beta cells: Potential application to islet transplantation". 2nd Joint Symposium EDTA-ERA, Spanish Research Council and Queen Sofia Institute for Renal Research. Madrid, Spain.
- 2007 "Unraveling the physiologic role and therapeutic potential of HGF in diabetes". Pediatric Endocrinology Ground Rounds, Division of Pediatric Endocrinology, Children's Hospital of Pittsburgh, Pittsburgh, PA.
- 2007 "Protein Kinase C Zeta: A key kinase in growth factor-mediated beta cell proliferation". Endocrine Research Conference, Division of Endocrinology and Metabolism, University of Pittsburgh, Pittsburgh, PA.
- 2007 "Growth factor-mediated beta-cell replacement and regeneration". Division of Endocrinology, Son Dureta Hospital, Mallorca, Spain.
- 2007 "Beta-cell replacement and regeneration: New strategies for diabetes treatment". IUNICS, Balears Islands University, Mallorca, Spain.
- 2008 "Protein Kinase C Zeta in the regulation of beta cell proliferation". 8th Annual Levine Symposium on "Translational Research in Type 1 Diabetes: Beyond Insulin and the Edmonton Protocol," City of Hope National Medical Center, City of Hope, CA.
- 2008 "Growth factors and signaling pathways for beta cell replacement and diabetes". Research Seminar Series for the Academic year 2007-2008, Canary Islands General University Hospital, La Laguna University, Tenerife, Spain.
- 2008 "Protein Kinase C Zeta and beta cell proliferation". Pacific Northwest Research Institute Seminar Series, University of Washington, Seattle, WA.
- 2009 "A Janus-Faced Growth Factor in the Regulation of Pancreatic Beta Cell Survival" Endocrine Research Conference, Division of Endocrinology and Metabolism, University of Pittsburgh, Pittsburgh, PA.
- 2009 "Growth factors and cell therapy for improving beta cell replacement". Annual Meeting of the Catalonian Society of Transplantation, Barcelona, Spain.
- 2009 "Control of beta cell proliferation". Annual Meeting of the Spanish Society of Diabetes, Tenerife, Spain.
- 2010 "Beta Cell Growth Factors and Signaling Pathways: Physiological Role and Therapeutic Potential in Diabetes". Division of Endocrinology and Metabolism, University of Alabama at Birmingham, AL.
- 2010 "Novel Insights into the regulation of maternal beta cell adaptation during pregnancy: Role of growth factors". In the Symposium "Impaired Beta-Cell Adaptation During Pregnancy: Maternal & Transgenerational Effects Leading to Diabetes Mellitus", The Endocrine Society Annual Meeting, San Diego, CA.
- 2010 "Protein kinase zeta and the pancreatic beta cell". In the Symposium "Beta cell intracellular signaling: PI3K, PKCs and IKKs", American Diabetes Association Annual Meeting, Orlando, FL.
- 2010 "Protein kinase zeta and pancreatic beta cell proliferation". In the Workshop "Beta Cell Replication", JDRF-Broad-Sanofi-Aventis, Broad Institute-Harvard University, Cambridge, MA.
- 2011 "Growth factors and signaling pathways for the expansion of functional pancreatic beta cells". Molecular, Cellular, and Developmental Basis of Endocrinology Conference, Division of Endocrinology, Yale University., CT.
- 2011 "Hepatocyte growth factor signaling in beta cell expansion and regeneration", Second Annual Sanford Health Type 1 Diabetes Symposium: Current Activities in Beta Cell Regeneration, Sanford Health, Sanford USD Medical Center, Sioux Falls, SD.
- 2011 "Growth factor signaling for pancreatic beta cell expansion and preservation", Endocrine Research Conference, Division of Endocrinology and Metabolism, University of Pittsburgh, Pittsburgh, PA.
- 2012 "Regulation of pancreatic beta cell growth, function and survival", Diabetes Research Institute, Ohio University, Athens, OH.
- 2012 "Growth factors and signaling pathways in the expansion of functional pancreatic beta cells". Montreal Diabetes Research Center Seminar, Université de Montréal. Montréal, Canada.
- 2012 "Regulation of Pancreatic Beta Cell Growth, Survival and Function by Hepatocyte Growth Factor". Diabetes, Obesity and Metabolism Institute (DOMI) Work In Progress. Mount Sinai School of Medicine, New York, NY.
- 2013 "Hepatocyte Growth Factor (HGF) signaling for beta cell regeneration. When serendipity can help for the treatment of T1D". Diabetes, Obesity and Metabolism Institute (DOMI) Type I Diabetes Day. Seminar Series. Icahn School of Medicine at Mount Sinai, New York, NY.

- 2013 "Mouse Beta Cell Phenotyping: Methodologies and Examples". Merck-Icahn School of Medicine at Mount Sinai Meeting, New York, NY.
- 2013 "Regulation of Pancreatic Beta Cell Growth, Function and Survival: Implications in Diabetes", The Mindich Child Health & Development Institute Seminar, Icahn School of Medicine at Mount Sinai Meeting, New York, NY.
- 2013 "Atypical Protein Kinase C Zeta Activation, Signaling and Action in the Pancreatic Beta Cell". Diabetes, Obesity and Metabolism Institute (DOMI) Work In Progress. Mount Sinai School of Medicine, New York, NY.
- 2013 "Growth factors and signaling pathways for pancreatic beta cell regeneration". Molecular Biology and Genetics Institute, Department of Biochemistry, University of Valladolid, CSIC, Spain.
- 2014 "Role of PKC-zeta in Beta Cell Signaling". Keystone Symposium: Emerging Concepts and Targets in Islet Biology (D3). Keystone, CO.
- 2014 "Regulation of pancreatic beta cell replication: Looking for signals in the intracellular roads". Division of Metabolism, Endocrinology and Diabetes (MEND), Department of Internal Medicine, University of Michigan, Ann Arbor, MI.
- 2014 "Pancreatic beta cell proliferation: Looking for signals in the intracellular roads ". Diabetes, Obesity and Metabolism Institute (DOMI) Work In Progress. Mount Sinai School of Medicine, New York, NY.
- 2015 "Recent Advances in the Regulation of Pancreatic Beta Cell Replication". Diabetes Research Center Seminars. Albert Einstein College of Medicine of Yeshiva University, New York, NY.
- 2015 "Control of Beta Cell Proliferation and Expansion by Protein Kinase C Zeta". The Naomi Berrie Diabetes Center, Columbia University Medical center, New York, NY.
- 2015 "Human Beta Cell Proliferation and Intracellular Signaling". University of Washington, UW Diabetes Research Center, Seattle, WA.
- 2015 "Uncovering Intracellular Signaling Pathways that Regulate Adaptive Pancreatic Beta Cell Replication". Diabetes, Obesity and Metabolism Institute (DOMI) Work In Progress. Mount Sinai School of Medicine, New York, NY.
- 2015 "Advances and challenges in the treatment of diabetes". The Child Health Research Seminar. Mount Sinai School of Medicine, New York, NY.
- 2016 "Nutrient Oversupply and Adaptive Pancreatic Beta Cell Expansion". Diabetes, Obesity and Metabolism Institute (DOMI) Work In Progress. Mount Sinai School of Medicine, New York, NY.
- 2016 "Modulation of Autoimmunity and Beta Cell Survival for Type 1 Diabetes". *1st Cuban-American Workshop on Diabetes: Prevention, Management and Cure*, as part of the International Meeting "Controlling Diabetes and its more severe complications", Varadero, Matanzas, Cuba.
- 2017 "Mechanisms of Adaptive Pancreatic Beta Cell Expansion: Potential Therapeutic Targets for Diabetes?" Diabetes Research Institute-Division of Endocrinology, University of Miami Medical School, Miami, FL.
- 2017 "Advances and Challenges in Beta Cell Replacement and Regeneration Strategies for Treating Diabetes". Regeneron Pharmaceuticals, Inc., Tarrytown, NY.
- 2017 "Pancreatic Beta Cell Regeneration and Protection as Potential Therapies to Treat Diabetes: Advances and Challenges". Division of Endocrinology, Emory University, Atlanta, GA.
- 2018 "Advances in Pancreatic Beta Cell Expansion and Protection for Diabetes Treatment". Diabetes, Obesity and Metabolism Institute (DOMI) Work In Progress. Mount Sinai School of Medicine, New York, NY.
- 2019 "Advances in pancreatic beta cell regeneration for diabetes treatment". Plenary talk, Diabetes and endocrine disorders, International Conference on Reproduction, Endocrinology and Development, Navrachana University, Varodara, India.
- 2019 "Adaptive pancreatic beta cell expansion in insulin resistance". Invited Conference, Sun Pharmaceuticals Industries, Varodara, India.
- 2019 "Pancreatic beta cell adaptation to diet and age: When Myc is just not enough". Invited Speaker, Research Seminar Series, Molecular Biology and Genetics Institute, University of Valladolid, Spain.
- 2019 "Advances in Pancreatic Beta Cell Protection and Regeneration for Diabetes Treatment". Invited Speaker, Biomedical Sciences Seminar Series, Department of Biomedical Sciences, Cornell University, Ithaca, NY.

