

CURRICULUM VITAE

Carolina Solis-Herrera MD

GENERAL INFORMATION

PERSONAL DATA:

Date of Preparation: 05/18/22

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Endocrinology Division MC 7877
San Antonio, TX 78229

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EDUCATION:

<u>Year</u>	<u>Degree</u>	<u>Discipline</u>	<u>Institution/Location</u>
2003	MD		Universidad Autonoma de Baja California, Tijuana, Mexico

TRAINING:

Clinical Fellowship

<u>Year</u>	<u>Discipline</u>	<u>Institution/Location</u>
2015-2017	Endocrinology, Diabetes & Metabolism	UTHSCSA, San Antonio, TX, USA
2007-2009	Endocrinology, Diabetes & Metabolism	Hospital General de Mexico, Mexico City, Mexico

Diploma

<u>Year</u>	<u>Discipline</u>	<u>Institution/Location</u>
2008-2009	Nutrition	Centro Medico Nacional Siglo XXI, Mexico City, Mexico

Post Doctoral Fellowship

<u>Year</u>	<u>Discipline</u>	<u>Institution/Location</u>
2009-2013	Diabetes Research	UTHSA, San Antonio, TX, United States

Residency

<u>Year</u>	<u>Discipline</u>	<u>Institution/Location</u>
2014-2015	Internal Medicine	UTHSA, San Antonio, TX, United States
2003-2007	Internal Medicine	Hospital General del Estado de Sonora, Hermosillo, Mexico

ACADEMIC APPOINTMENTS:

10/2021 - Present	Chief, Endocrinology Division University of Texas Health at San Antonio, Department of Medicine, San Antonio, TX
10/2021 - Present	Medical Director-Endocrinology Clinic University of Texas Health San Antonio, Department of Medicine, San Antonio, TX
02/2018 - Present	Medical Director-Diabetes and Obesity Clinic University of Texas Health San Antonio, Department of Medicine, San Antonio, TX
10/2017 - Present	Assistant Professor University of Texas Health San Antonio, Department of Medicine, San Antonio, TX

CERTIFICATION AND LICENSURE:

Board Certification

<u>Description/Agency</u>	<u>Status</u>	<u>Date Acquired</u>	<u>Number</u>	<u>Expiration</u>
Endocrinology Board Certification American Board of Internal Medicine- Endocrinology	Certified	01/2017	n/a	01/2027
Internal Medicine Board Certification American Board of Internal Medicine- Internal Medicine	Certified	01/2015	n/a	01/2025
Endocrinology Mexican Board Cert Endocrinology Mexican Board	Certified	01/2009	n/a	01/2024
IM Board Certification Internal Medicine Mexican Board	Inactive	01/2007	n/a	01/2012

License to Practice

<u>Description/Agency</u>	<u>Status</u>	<u>Date Acquired</u>	<u>Number</u>	<u>Expiration</u>
Texas Medical License Texas Medical Board	Certified	04/2017	R2748	05/2022

HONORS AND AWARDS:

04/2022	Outstanding Women in Medicine 2021: SA Scene Magazine April issue
11/2021	Appointed to the Clifford Elder White Gram Fund For Diabetes Research Endowment.
10/2021	2021 UT System Rising Star Award in Clinical Research.
09/2021	2021 Outstanding Women in Medicine: University of Texas Health Long School of Medicine. Recognition to women in medicine and science. Organized by the office of inclusion and diversity.
04/2021	Outstanding Women in Medicine 2021: SA Scene Magazine April issue
03/2021	"San Antonio's Best Female Doctor 2021": Elected by peers and published in SA Scene Magazine, March issue 2021
01/2020	"Marquis Who is Who in America 2020": Marquis Who's Who in America began publishing biographical data in 1899. Since then, Marquis has remained the standard for reliable and comprehensive biographical data. Each year, a publication of Who's Who in America is published featuring outstanding professionals in multiple fields across the United States.
01/2017	Outstanding Scholastic Activity- Top 1% U.S. Endocrinology In-Training Exam: Endocrinology In-Training Fellows Examination: Scored in 99th percentile in US
04/2016	Clinical Fellows Abstract in Diabetes - Award by the Endocrine Society 2016: Clinical Fellows Abstract in Diabetes - Award by the Endocrine Society 2016 \$1,500 Project: Dapagliflozin: Metabolic and Molecular Mechanisms of Increased Plasma Ketones University of Texas Health Science Center at San Antonio Endocrinology Fellow, PI: Ralph A. DeFronzo, MD
01/2016	Outstanding Scholastic Activity- Top 3% U.S. Endocrinology In-Training Exam: Endocrinology In-Training Fellows Examination: Scored in 97th percentile in US
01/2013	Best PGY1 Resident of the Year: Best PGY1 Resident of the Year during internal medicine residency
01/2008	Chief Resident/Fellow of Endocrinology: Chief Resident/Fellow of Endocrinology, Hospital General de Mexico 2008 - 2009
02/2007	Spokeperson- Commencement Speech Class 2007: Spokesperson elected by peers to deliver commencement speech for the entire all- specialties resident/fellowship class of 2007, Hospital General del Estado de Sonora
01/2007	Graduated with Honors: Graduated with Honors from the Internal Medicine Residency, Hospital General del Estado de Sonora
01/1997	Student Representative: Student Representative of the medicine class during MS3 and MS4, Universidad Autonoma de Baja California from 1997-1999

PROFESSIONAL DEVELOPMENT:**Administrative**

<u>Date</u>	<u>Description</u>	<u>C.E. Units/Hours</u>
01/01/22 - present	Leadership Excellence for Administrative Professionals (LEAP). This is a nine-month program to expand leadership knowledge and practical application skills for evolving healthcare, higher education, and research. Topics covered include: Organization and administration of the U.S. healthcare system, local healthcare programs and agencies, and UT Health San Antonio, Strategic planning at the institutional, department, and team levels The role of the Office of Human Resources in successfully managing teams. Assessing leadership capabilities and developing the skills required to successfully lead teams. Quality and service components that make up UT Health Operations Mitigating risk and making strategic decisions based on sound risk and financial management principles	54.00 / 54.00

<u>Date</u>	<u>Description</u>	<u>C.E. Units/Hours</u>
09/01/20 - 08/01/21	Executive Development Program for Emerging Health Leaders, The Executive Development Program for Emerging Health Leaders (EDP) is a joint program with UTSA College of Business designed for SOM faculty already serving in leadership positions. Consisting of monthly 3-hour sessions over twelve months and taught by award-winning UTSA College of Business faculty, the EDP curriculum combines business-related lectures, readings, group discussions, team projects, and presentations. Lecture topics include leadership principles, conflict resolution, negotiation skills, strategic planning, and financial management, thereby providing participants the opportunity to develop leadership and management skills in four core areas of expertise: communication, influence, career leadership development, and the fundamentals of administration. 33 hours of instructor-led sessions and 20 hours of self-paced online learning.	53.00 / 53.00

TEACHING**Group Instruction**

<u>Date</u>	<u>Description</u>	<u>Institution</u>	<u># Students</u>
09/2018 - Present	Diabetes Lecture Series for Endocrinology Fellows <i>Annual Course for Endocrinology fellows from UTHSA and the Military. Eight Fellows and 12-18 faculty members per session.</i>	UTHSCSA	8
07/2018 - Present	Diabetes Lecture Series for Graduate Students <i>Graduate Student Physiology Course sponsored by the diabetes division and performed yearly. Approximately 20 graduate students.</i>	UTHSCSA	20
09/2017 - Present	CIRC Endocrinology and Reproduction Course for Medical Students <i>Annual course sponsored by the endocrinology division and performed yearly. Approximately 60 medical students.</i>	UTHSCSA	60

Individual Instruction

<u>Date</u>	<u>Description</u>	<u>Institution</u>	<u># Students</u>
05/2019 - 09/2019	Preceptor Phy Assist Students <i>Madison Ashley PA 2nd Year Student 2019 UTHSA Hanna Heiligman PA 2nd Year Student 2019 UTHSA Christina Russel PA 2nd Year Student 2019 UTHSA Javier Armenta PA 2nd Year Student 2019 UTHSA Evelyn Oliva PA 2nd Year Student 2019 UTHSA Bethany Zablotsky PA 2nd Year Student 2019 UTHSA Camila Milgunucci PA 2nd Year Student 2019 UTHSA Maria Mosso PA 2nd Year Student 2019 UTHSA Charles Bui PA 2nd Year Student 2019 UTHSA Erica Giordano PA 2nd Year Student 2019 UTHSA Maureen Genov PA 2nd Year Student 2019 UTHSA Andrej Arquitola PA 2nd Year Student 2019 UTHSA</i>	UTHSA	12
01/2019 - 03/2019	Preceptor Post Doctoral Fellows <i>Post doctoral fellows are allowed to rotate for observership. 1. Mohamed Eletrebi- Postdoctoral research fellow UTHSA</i>	UTHSA	1
01/2019 - Present	Preceptor Endocrinology Fellows <i>Endocrinology Fellows 1-2 per year rotate in the diabetes clinic for preceptorship.</i>	UTHSA	2
10/2017 - Present	Supervising Physician In-Patient Endocrinology Service <i>In hospital endocrinology consult service. One month per year with a second year endocrinology fellow. Occasionally, intramural and extramural internal medicine residents and medical students are present. Eduardo Dusty Luna 2016- 2018 UTHSA Enrique Maldonado-Corchado 2016- 2018 UTHSA Mary Mok 2017- 2019 UTHSA Gustavo Armaiz Pena 2017- 2019 UTHSA Lyan Gondin Hernandez 2018- 2020 UTHSA Jonathan Trejo 2018- 2020 UTHSA Joy Wortham 2019- 2021 UTHSA Brenda Sandoval 2019- 2021 UTHSA Emad Ali 2020- 2022 UTHSA Megan Gawlik MS4 Year UTHSA Bakare, Oluwadunsin MS4 Year UTHSA</i>	UTHSA	1

Post-Doctoral Student Supervision

<u>Date</u>	<u>Description</u>	<u>Institution</u>	<u># Students</u>
01/2016 - Present	Supervising Physician of Post Doctoral Diabetes Research Fellows <i>Diabetes Research Mentorship Steven Chen (China) Post Doc Fellow UTHSA 2018- Present, Yejuan Qin (China) Post Doc Fellow UTHSA 2018-Present, Mariam Alatrach Post Doc Fellow UTHSA 2016- 2020, Henri Honka (Finland) Post Doc Fellow UTHSA 2018- 2019, Jonathan Vazquez Austin PreMed Student Class 2020, Museedi, Abdulrahman I.M.Resident UTHSA Class 2018-2021</i>	UTHSCSA	6

Visiting Graduate Students

<u>Date</u>	<u>Description</u>	<u>Institution</u>	<u># Students</u>
06/2019 - 08/2021	Mentor of visiting graduate student. Research Project in metabolic/nephrology research. <i>Mentor during the SPURRS Program, SPURRS: San Antonio Program for Undergraduate Research in Renal Science 2019. Funded by a grant from the National Institute for Diabetes and Digestive and Kidney Diseases (NIDDK), the University of Texas Health School of Medicine in San Antonio is offering undergraduate students opportunities to work with a faculty mentor on a summer research project. Coordinated by Dr. Brian Reeves, MD Chairman of the Department of Medicine at UTHSA. Jonathan Vasquez, UT Austin, Margaret Vo, Texas Christian University</i>	UTHSCSA	2

RESEARCH

EXPERTISE:

Endocrinology, Diabetes and Metabolism Translational and Clinical Research - Over 12-Years of experience as an Endocrinologist and Physician- Scientist in Human Clinical Research. Proficient in multiple metabolism research techniques in humans to assess beta- cell function, insulin sensitivity, measurement of hepatic glucose production and total body glucose disposal, indirect calorimetry, DXA, PET, MRI/MRS, radioactive tracers, stable isotope methodology and assessment of myocardial fuel metabolism. Familiar with metabolic PET analysis software (Carimas) and cardiac MRI (CVI 46) analysis software (CVI42). Highly specialized in the areas of Diabetes, Obesity, Lipids, Metabolism and Cardio-Renal Endocrinology.

PROJECTS:

Curriculum Development

10/2018-Present Intramural collaboration Diabetes Division and Medicine Department, I collaborate with the Medicine Department representing the Endocrinology and Diabetes Divisions during interview season for Internal Medicine Residency candidates at UTHSCSA

Departmental Projects

10/2021-Present Pilot Project- **Survivorship Clinic** - To establish a program in partnership with pediatric endocrinology and oncology to follow up pediatric oncology survivors that develop endocrinology complications during adulthood in our diabetes and endocrinology clinics.

10/2021-Present Pilot Project- **Transplant Endocrinology**- To establish a program in partnership with the transplant clinics for optimal glycemic management pre and acute posttransplant periods. Improve changes of graft survival with optimal diabetes management.

10/2021-Present Pilot Project- **CGM Hospital Discharge Program** - To establish a program that provides CGM services upon discharge with follow up in our diabetes clinics. Improve glycemic management and decrease acute complications of diabetes and hospital readmissions.

04/2021-Present Pilot Project- **Pump start up program, Pilot Project**- To establish a program that provides the service of pump start training to our patients at the diabetes clinic at the MARC. Contract executed 4/2021, in process of hiring certified pump trainer.

10/2020-Present Pilot Project- **CGM Interpretation Services Diabetes Clinic**-MARC, Expansion of CGM interpretation services from the Diabetes Clinic to the Primary Care Clinic at the MARC.

Teaching Projects

09/2018-Present Diabetes Lecture Series, the diabetes lecture series is an annual course for the Endocrinology fellows and faculty presented during Grand Rounds on Mondays. I coordinate this course with the Endocrinology Program Director

10/2017-Present Intramural collaboration Diabetes and Endocrinology Divisions, I supervise endocrinology fellows interested in participating in diabetes clinical research performed at the Texas Diabetes Institute and the VA Hospital.

09/2017-Present CIRC Endocrinology course development for Medical Students, Collaboration with the Endocrinology Division Program Director In the MS2 endocrinology annual course.

09/2014-Present Intramural collaboration Diabetes and Medical School, Participation in the Resident Round-up meeting representing the Endocrinology and Diabetes Division with MS3 and MS4 interested and choosing a subspecialty within the Medicine Residency area.

PUBLICATIONS:

Book Chapter

1. **Solis-Herrera C**, Triplitt C, DeFronzo RA, Cersosimo E. Classification of Diabetes In: De Groot LJ, Chrousos G, Dungan K, Feingold KR, Grossman A, Hershman JM, Koch C, Korbonits M, McLachlan R, New M, Purnell J, Rebar R, Singer F, Vinik A. EndoText. South Dartmouth, MA: MDTText.com; 2021
2. **Solis-Herrera C**, Triplitt C, Reasner C, DeFronzo RA, Cersosimo E. Classification of Diabetes In: De Groot LJ, Chrousos G, Dungan K, Feingold KR, Grossman A, Hershman JM, Koch C, Korbonits M, McLachlan R, New M, Purnell J, Rebar R, Singer F, Vinik A. EndoText. South Dartmouth, MA: MDTText.com; 2018.
3. Cersosimo E, Triplitt C, **Solis-Herrera C**, Mandarino L, DeFronzo RA. Pathogenesis of Type 2 Diabetes

Journal Article

1. **Solis-Herrera C**, Ortiz L. A commentary on: Effects of subcutaneous tirzepatide versus placebo or semaglutide on pancreatic islet function and insulin sensitivity in adults with type 2 diabetes: a multicentre, randomised, double-blind, parallel-arm, phase 1 clinical trial. PracticeUpdate website. Available at: <https://www.practiceupdate.com/content/effects-of-tirzepatide-vs-placebo-or-semaglutide-on-pancreatic-islet-function-and-insulin-sensitivity-in-type-2-diabetes/135141/65/8/1>.
2. **Solis-Herrera**, Yuejuan Qin MD, Henri Honka MD PhD, Goeffrey Clarke PhD, Sonja Brune APRN, Curtis Triplitt PharmD, Eugenio Cersosimo MD PhD, Ralph DeFronzo MD Effect of elevated plasma ketones on cardiac efficiency. AHJ Dec 2021 242:164
3. **Solis-Herrera C**, Triplitt C, Chilton R. Dapagliflozin in Type 2 Diabetes Converts Patients Back to a Potentially Advantageous Fasting Metabolic Profile. <http://www.acc.org>. Nov 16, 2021. Accessed [insert access date]. <https://www.acc.org/Latest-in-Cardiology/Articles/2021/11/16/17/09/Dapagliflozin-in-T2DM-Converts-Patients-Back-to-a-Potentially-Advantageous-Fasting-Metabolic-Profile>.
4. **Solis-Herrera C**, Cersosimo E, Triplitt C. Cardioprotective Effects of Pioglitazone in Type 2 Diabetes. Diabetes Spectr. 2021 Aug;34(3):248-256. doi: 10.2337/ds20-0067. Epub 2021 Aug 18.
5. Tripathy D, **Solis-Herrera C**, Ryder REJ. Antihyperglycemic Algorithms for Type 2 Diabetes: Focus on Nonglycemic Outcomes. Diabetes Spectr 2021 Aug;34(3):248-256. doi: 10.2337/ds20-0067. Epub 2021 Aug 18
6. Kane MP, Triplitt CL, **Solis-Herrera C**. Management of type 2 diabetes with oral semaglutide: Practical guidance for pharmacists. Am J Health Syst Pharm. 2021 Mar 18;78(7):556-567. doi: 10.1093/ajhp/zxaa413.
7. Cersosimo E, **Solis-Herrera C**, Triplitt C. The evidence behind early aggressive multi-drug treatment in type 2 diabetes. Trends Diab Metab 2021 doi:10.15761/TDM.1000121
8. Honka H, **Solis-Herrera C**, Triplitt C, Norton L, Butler J, DeFronzo RA. Therapeutic Manipulation of Myocardial Metabolism: JACC State-of-the-Art Review. J Am Coll Cardiol. 2021 Apr 27;77(16):2022-2039.
9. Solis-Herrera C, Alatrach, M. Association of Glycemia With Insulin Sensitivity and β -cell Function in Adults With Early Type 2 Diabetes on Metformin Alone PracticeUpdate 2021 Mar
10. González-Ortiz M, Castro-Martínez M, Solis-Herrera C, Alexanderson-Rosas E. et al. Pioglitazona, una alternativa aún vigente para el control de la diabetes tipo 2 Revista Mexicana de Medicina Interna 2021
11. Merovci A, Tripathy D, Chen X, Valdez I, Abdul-Ghani MA, Solis-Herrera C, Gastaldelli A, DeFronzo RA. Effect of Mild Physiologic Hyperglycemia on Insulin Secretion, Insulin Clearance and Insulin Sensitivity in Healthy Glucose Tolerant Subjects Diabetes 2021 Jan;70(1):204-213.
12. Daniele G*, Solis-Herrera C* DeFronzo RA, DelPrato S. Renal Denervation Attenuates Endogenous Glucose Production Increase with SGLT-2 Inhibition in subjects with Kidney Transplantation Diabetologia 2020 Nov;63(11):2423-2433.
13. 8. Qin Y, Adams J, Solis-Herrera C, Triplitt C, DeFronzo R, Cersosimo E. Clinical parameters, fuel oxidation and glucose kinetics in type 2 diabetes patients treated with dapagliflozin plus saxagliptin Diabetes Care 2020 Jul;43(10):2519-2527.
14. Solis-Herrera C, Daniele G, Alatrach M, Agyin C, Triplitt C, Adams J, Patel R, Gastaldelli A, Honka H, Abdul-Ghani M, Cersosimo E, Del Prato S, DeFronzo RA.. Increased in Endogenous Glucose Production with SGLT2 Inhibition is Unchanged by Renal Denervation and Correlates Strongly with the Increase in Glucose Excretion. Diabetes Care 2020 May;43(5):1065-1069.
15. Solis-Herrera C, Sheikh O, Chilton R. A new perspective on lowering CV risk from hypoglycaemia Eur Heart J

2020 Mar:218-220.

16. Ripley EM, Clarke GD, Hamidi V, Martinez R, Settles F, Solis-Herrera C, Abdul-Ghani M, Tripathy D, DeFronzo RA.. Reduced Skeletal Muscle Phosphocreatine concentration in Type 2 Diabetic Patients: A Quantitative Image-Based Phosphorus-31 mR Spectroscopy Study Am J Physiol Endocrinol Metab 2018 Aug;315(2):229-239.
17. Clarke GD, Molina-Wilkins M, Solis-Herrera C, Mendez V, Monroy AG, Cersosimo E, Chilton RJ, Abdul-Ghani M, DeFronzo RA. Impaired left ventricular diastolic function in T2DM patients is closely related to glycemic control. Endocrinol Diabetes Metab 2018 Apr;1:e00014
18. Al Jobori H, Daniele G, Adams J, Cersosimo E, Solis-Herrera C, Triplitt C, DeFronzo RA, Abdul-Ghani M. Empagliflozin treatment is associated with improved B-Cell function in type 2 diabetes mellitus J Clin Endocrinol Metab 2018 Apr;103(4):1402-1407.
19. Clarke*, GD, Solis-Herrera* C, Molina-Wilkins M, Martinez S, Merovci A, Cersosimo E, Chilton RJ, Iozzo P, Gastardelli A, Abdul-Ghani M, DeFronzo RA. *Authors contributed equally to manuscript.. Pioglitazone Improves Left Ventricular Diastolic Function in Diabetic Subjects Diabetes Care 2017 Nov;40(11):1530-1536.
20. Daniele G, Xiong J, Solis-Herrera C, Merovci A, Eldor R, Tripathy D, DeFronzo RA, Norton L, Abdul-Ghani M.. Dapagliflozin Enhances Fat Oxidation and Ketone Production in Patients With Type 2 Diabetes Diabetes Care 2016 Nov;39(11):2036-2041.
21. Merovci A, Abdul-Ghani M, Mari A, Solis Herrera C, Xiong J, Daniele G, Tripathy D, DeFronzo R. Effect of Dapagliflozin With and Without Acipimox on Insulin Sensitivity and Insulin Secretion in T2DM Males J Clin Endocrinol Metab 2016 Nov;101(3):1249-1256.
22. Triplitt CL, Solis-Herrera C. GLP-1 Receptor Agonists: Practical Considerations for Clinical Practice Diabetes Educ 2015 Dec;41(1):32S-46S.
23. Triplitt C, Solis-Herrera C, Cersosimo E, Abdul-Ghani M, DeFronzo RA. Empagliflozin and linagliptin combination therapy for treatment of patients with type 2 diabetes mellitus Expert Opin Pharmacother 2015 Nov;16(18):2819-2833.
24. Merovci A, Mari A, Solis C, Daniele G Chavez-Velazquez A, Tripathy D, Urban McCarthy S, Abdul-Ghani M, DeFronzo RA.. Dapagliflozin lowers plasma glucose concentration and improves B-cell function J Clin Endocrinol Metab 2015 May;100(5):1927-1932.
25. Cersosimo E, Solis-Herrera C, Triplitt C. Inhibition of renal glucose reabsorption as a novel treatment for diabetes patients J Bras Nefrol 2014 Mar;36(1):80-92.
26. Merovci A*, Solis-Herrera C*, Daniele G, Eldor R, Fiorentino TV, Tripathy D, Xiong J, Perez Z, Norton L, Abdul-Ghani MA, DeFronzo RA. *Authors contributed equally to manuscript.. Dapagliflozin Improves Muscle Insulin Sensitivity But Enhances Glucose Production J Clin Invest 2014 Feb;124(2):509-514.
27. Solis-Herrera C, Triplitt C, Lynch JA.. Nephropathy in Youth and Young Adults with Type 2 Diabetes Mellitus Current Diabetes Reports 2014 Feb;14(2):1-15.
28. Cersosimo E Solis-Herrera C, Trautmann ME, Mallory J, Triplitt CL.. Assessment of pancreatic beta cell function: review of methods and clinical applications Curr Diabetes Rev 2014 Jan;10(1):2-42.
29. Solis-Herrera, C, Triplitt, C, Garduno-Garcia, J, Adams, J, DeFronzo, RA, Cersosimo EC. Mechanisms of Glucose Lowering of Dipeptidyl Peptidase-4 Inhibitor Sitagliptin When Used Alone or With Metformin in Type 2 Diabetes Diabetes Care 2013 Sep;36(9):2756-2762.
30. Lopez-Alvarenga, JC., Solis-Herrera, C., Kent, Jack., Deepali, J., Sulayma, A., Saheed, Y., Osman, H., Bayoumi, R., Comuzzie GA. Prevalence and heritability of clusters for diagnostic components of metabolic syndrome: the Oman family study Metabolic Syndrome and Related Disorders 2008 Jun;6(2):129-135
31. Castillo, G. Solis-Herrera C. Hemorragia pulmonary y sindrome de insuficiencia respiratoria aguda secundaria a golpe de calor Rev Inst Nal Enf Resp 2006 Oct;19(4):276-281.
32. Solis-Herrera C. Analisis del nuevo abordaje del síndrome metabólico Acta Medica de Sonora 2006 Aug;3:1-6

PRESENTATIONS:

- 12/2021 Hyperketonemia on Cardiac Function in Patients with Type 2 Diabetes and Heart Failure. Research Day UT Health San Antonio. First Place December 2021
- 12/2021 Effect of Elevated Plasma Ketones on Cardiac Efficiency. Heart in Diabetes Meeting. First Place, Outstanding Clinical Research Award. New York, NY September 10-12, 2021.
- 08/2021 Cardiovascular outcomes with GLP1RA and SGLT2 inhibitors, AACE meeting Texas Chapter, American Association of Clinical Endocrinologists, San Antonio, TX (Invited Speaker)
Details: *Annual meeting from the American Association of Clinical Endocrinologists Texas Chapter, focused to endocrinologists, endocrinology surgeons, other subspecialties and primary care providers.*
- 07/2021 Insulin resistance: Muscle, adipose tissue and myocardium., First Annual Meeting Mexican Endocrinology College, First Annual Meeting Mexican Endocrinology College, Mexico City, Mexico (Invited Speaker)
Details: *Virtual meeting of the Mexican Endocrinology College. Directed to endocrinologists, other subspecialties and primary care providers.*
- 06/2021 Diabetes and Covid-19: What your patients need to know, University Health WebEx Series, University Health System, San Antonio, TX (Invited Speaker)
Details: *University Health Strategic Planning and Business Development has started a WebEx series to promote targeted service lines. Target audience are MD's and mid- levels in rural communities as well as local IM and FP's that refer to UHS. CME is offered 1.00 AMA PRA Category 1 Credit*
- 06/2021 Review of Evidence and Clinical experience in the management of obesity, Webinar, Diabetes Association of Peru, Webinar, Peru (Invited Speaker)
Details: *Practice update in evidence based clinical experience in the management of obesity for endocrinologists and internal medicine providers of Perú.*
- 06/2021 SGLT2 inhibitors: A New Paradigm in Renal Protection., XLVII practice update course in nephrology IMIN 2021, Mexican Institute of Nephrologic Research (IMIN), Virtual Conference, Mexico (Invited Speaker)
Details: *Annual practice update in nephrology with national and international speakers. Audience: Nephrologists, internal medicine specialists, primary care providers and trainees.*
- 03/2021 COVID-19 as related to diabetes, children, and the latest update on vaccines, Office of the Dean- COVID 19 Lecture Series, COVID lecture series, Office of the Dean- Long School of Medicine, San Antonio, TX (Panel)
Details: *2021- COVID-19 TODAY presentation, including providing information about COVID-19 as related to diabetes, children, and the latest update on vaccines 3/4/2021*
<https://attendee.gotowebinar.com/recording/5069704493061392907>
- 01/2021 SGLT2i from a simple glucodiuretic to a complex nephroprotective agent, Cardio Renal Connections Meeting, Cardiology, Nephrology and Diabetes Divisions, University of Texas Health San Antonio, San Antonio, TX (Invited Speaker)
Details: *Cardio Renal Connections is a unique meeting bringing together clinicians and scientists to explore the complex relationships between the heart and kidney. Audience: Cardiology, Nephrology, Endocrinology, primary care, APPs, Pharm Ds, Fellows, Residents and Medical Students from different areas in the Southwest including UT San Antonio.*
- 01/2021 Moderator- Module: Diet, Lipids and Prevention, Cardio Renal Connections Meeting, Cardiology, Nephrology and Diabetes Divisions, University of Texas Health San Antonio, San Antonio, TX (Panel)
Details: *Cardio Renal Connections is a unique meeting bringing together clinicians and scientists to explore the complex relationships between the heart and kidney. Audience: Cardiology, Nephrology, Endocrinology, primary care, APPs, Pharm Ds, Fellows, Residents and Medical Students from different areas in the Southwest including UT San Antonio.*
- 01/2021 Case-based discussion: SGLT2i initiation. Expert panel discussion., Cardio Renal Connections Meeting, cardiology, Nephrology and Diabetes Divisions, University of Texas Health San Antonio, San Antonio, TX (Panel)
Details: *Cardio Renal Connections is a unique meeting bringing together clinicians and scientists to explore the complex relationships between the heart and kidney. Audience: Cardiology, Nephrology,*

Endocrinology, primary care, APPs, Pharm Ds, Fellows, Residents and Medical Students from different areas in the Southwest including UT San Antonio.

- 01/2021 Moderator and Judge. Poster session and competition., Cardio Renal Connections Meeting, Cardiology, Nephrology and Diabetes Divisions, University of Texas Health San Antonio, San Antonio, TX (Panel)
- 01/2021 Diabetes and Covid-19: What our patients need to know, UT Health School of Dentistry Wellness Series, School of Dentistry, University of Texas Health at San Antonio, San Antonio, TX (Invited Speaker)
Details: *Weekly event sponsored by the UT Health School of Dentistry, dedicated to a wellness series for faculty and staff on different topics. Audience: Faculty, staff and trainees from the UT Health School of Dentistry.*
- 12/2020 SGLT2i The Gift that Keeps on Giving, Endocrinology Grand Rounds, Endocrinology Division, University of Texas Health San Antonio, San Antonio, TX (Sole Presenter)
- 11/2020 Updates on Renal Protective Mechanisms with SGLT2 inhibitors, Mexican College of Internal Medicine Annual Meeting, Mexican College of Internal Medicine, Mexican College of Internal Medicine, Virtual- Mexico City, MEXICO, TX , Mexico (Invited Speaker)
Details: *Mexican College of Internal Medicine Annual Meeting. Audience International medical community: Internal Medicine, primary care providers, other subspecialists.*
- 11/2020 SGLT2i in the therapeutic armamentarium of the cardiologist, Mexican Cardiology Annual Meeting, Mexican Cardiology Association, Mexican Cardiology Association, Virtual- Mexico City, Mexico, TX , Mexico (Invited Speaker)
Details: *Mexican Cardiology Annual Meeting. Audience: International Cardiologists, Internal Medicine, Primary care.*
- 10/2020 DPP4 inhibitors, are they still of value in our clinical practice?, Cardio-Diabetes Master Class 2020, Multidisciplinary endeavor., Virtual Meeting- Mexico City, Mexico, TX , Mexico (Invited Speaker)
Details: *Multidisciplinary endeavor. Mexican Cardiology Society, Mexican Cardiology College, Mexican General Medicine Normative National Committee, American College of Cardiology. Audience: International Cardiology, Diabetes, Endocrinology, Internal Medicine and Primary Care Providers.*
- 09/2020 Useful online resources for endocrinologists, Endocrine Grand Rounds, Endocrinology Division, University of Texas Health San Antonio, San Antonio, TX
Details: *Endocrine Grand Rounds is a weekly academic activity of the Division of Endocrinology- DOM at UTHSA. Endocrine and diabetes related topics are presented by intramural and extramural speakers.*
- 09/2020 Type 1 Diabetes, CIRC course for medical students at UTHSA, Medical Students, Long School of Medicine- UTHSA, San Antonio, TX (Invited Speaker)
- 09/2020 Diabetic Ketoacidosis and Hyperglycemic Hyperosmolar Coma, CIRC course for medical students at UTHSA, Medical Students, Long School of Medicine- UTHSA, San Antonio, TX (Invited Speaker)
Details: *The CIRC course endocrinology module, is a yearly activity coordinated by the GME, Long School of Medicine and the Endocrinology Division at UTHSA.*
- 03/2020 Prediabetes 2020 Update, Cardiometabolic Symposium, Multidisciplinary International Endeavor, Virtual Meeting- Mexico City, Mexico, TX (Invited Speaker)
Details: *Multidisciplinary endeavor with Cardiologists, Endocrinologists and Internal Medicine Physicians. Audience: Primary care providers.*
- 12/2019 “Re-fueling The Failing Heart: The Impact of SGLT2 Inhibition”, Medicine Grand Rounds, Internal Medicine Grand Rounds, University of Texas Health at San Antonio, San Antonio, TX (Sole Presenter)
Details: *Medicine Grand Rounds is a weekly academic activity sponsored by the Department of Medicine with presentations from speakers from different divisions on diverse medicine topics.*
- 12/2019 Hypoglycemia: The Physician’s Biggest Enemy, Second International Symposium on Diabetes & Cardio Metabolic Disease (DCMD), Primary care providers and specialists in the areas of diabetes, endocrinology, cardiology, nephrology, University of Texas Health at San Antonio- Division of Diabetes, San Antonio, TX (Sole Presenter)

Details: *Specialized symposium on diabetes and cardio-metabolic disorders organized by the Diabetes Division- UT Health San Antonio*

- 12/2019 Treatment Algorithms: ADA/EASD, AACE, ACC, Second International Symposium on Diabetes & Cardio Metabolic Disease (DCMD)., Primary care, specialists in cardiology, nephrology, diabetes and endocrinology, University of Texas Health at San Antonio- Diabetes Division, San Antonio, TX (Sole Presenter)
- 12/2019 Changing Landscape of CV Treatment in Type 2 Diabetes Focus on GLP1RA, Cardiology Pulse, Cardiology Division, University of Texas Health San Antonio, San Antonio, TX (Invited Speaker)
Details: *Cardiology Pulse is focused on improving patient care to provide timely updates of scientific data, new technology and guidelines. Audience: Cardiologists, Endocrinologists, Internal Medicine, Dietitians, Fellows, Residents and Medical Students.*
- 12/2019 Current Guidelines and Evidence for Inpatient Hyperglycemic Control: Scott and White Annual Hospitalist Conference: Management of the Complex Hospitalized Patient, Scott and White Annual Hospitalist Conference, Scott and White, San Antonio, TX (Invited Speaker)
Details: *The Management of the Complex Hospitalized Patient activity is designed to provide physicians, physician assistants and nurse practitioners with information and skills to improve their care of hospitalized patients.*
- 10/2019 Pioglitazone- New concepts, what the clinician needs to know, Diabetes Forum, Multidisciplinary Endeavor, Campeche, Mexico, TX , Mexico (Invited Speaker)
Details: *Diabetes Forum is an international endeavor with the Mexican Endocrine Society and Diabetes specialists from the U.S. and Latin America. Audience: Cardiologists, Endocrinologists, Nephrologists and Primary Care providers.*
- 10/2019 SGLT2 inhibitors, heart failure and mechanisms of cardiovascular benefit, Cardio- Renal Summit, Multidisciplinary Endeavor (Invited Speaker)
Details: *Multidisciplinary Endeavor with the Mexican Endocrine Society and International Endocrinologists, Cardiologists and Nephrologists. Audience: Cardiologists, Endocrinologists, Nephrologists and Primary Care providers.*
- 10/2019 Mechanisms of Cardiovascular Benefit with SGLT2 inhibitors, Curso internacional "Diabetes: The Pandemic of our era", Multidisciplinary Endeavor, Mexico City, Mexico (Invited Speaker)
Details: *Multidisciplinary Endeavor from the Centro Medico ABC, Alianza Medica, Joslin Diabetes Center, Open Medical Institute- Medical Education without Borders.*
- 07/2019 Heart Failure and Cardiovascular Metabolic Drugs, 15th annual Diabetes Conference, Texas A&M, Texas A&M, Corpus Christi, TX (Invited Speaker)
Details: *Regional conference aimed to provide an update to Primary Care Providers, Dietitians and APPs in different aspects of Diabetes.*
- 06/2019 Endogenous Glucose Production Increase with SGLT2 Inhibition is Unchanged by Denervation in Renal Transplant Patients but Highly Correlates to Urinary Glucose, 79th Scientific Sessions, American Diabetes Association, San Francisco, CA (Sole Presenter)
Details: *Poster Presentation*
- 06/2019 Decoupling Between ATP Utilization And Replenishment In Insulin Resistant Skeletal Muscle, 79th Scientific Sessions, American Diabetes Association, San Francisco, CA (Co-Author)
Details: *Poster Presentation*
- 05/2019 Renal Outcomes in Diabetes Trials: Benefits in Diabetic Kidney Disease, Cardio- Renal-Metabolic Potpourri: Roundtable Discussions Guest, Cardiology, Nephrology and Diabetes Divisions, University of Texas Health San Antonio, San Antonio, TX (Invited Speaker)
Details: *Multidisciplinary effort aimed to provide updates on selected topics in the area of cardio-renal-metabolics to primary care providers, trainees and faculty from cardiology, endocrinology and nephrology.*
- 03/2019 Emerging concepts of cardiovascular protection with SGLT2i in Prediabetes, Diabetes Forum, Multidisciplinary Endeavor, Puerto Vallarta, Mexico (Invited Speaker)
Details: *Multidisciplinary effort with the Mexican Endocrine Society and international Diabetes and Cardiology Specialists. Audience: Endocrinologists, cardiologists, primary care providers.*
- 02/2019 Cardiorenal connections update, Cardiorenal connections- Satellite meeting, Cardiology, Nephrology and Diabetes Divisions, University of Texas Health San Antonio, San Antonio, TX

(Panel)

Details: *The cardio renal connections meeting is a multidisciplinary efforts to update primary care and subspecialty provides on select topics in the areas of cardiology, nephrology and diabetes.*

- 11/2018 The Growing problem of Type 2 Diabetes, Diabetic Foot Update, Texas Podiatry Medical Association (TPMA), San Antonio, TX (Invited Speaker)
Details: *TPMA Conferences are intended for licensed podiatric physicians and their assistants to develop and improve the podiatric knowledge and competency to better serve the citizens of Texas and surrounding states*
- 11/2018 Mono and combination therapies for the treatment of type 2 diabetes, Diabetic Foot Update, Texas Podiatry Medical Association (TPMA), San Antonio, TX (Invited Speaker)
Details: *TPMA Conferences are intended for licensed podiatric physicians and their assistants to develop and improve the podiatric knowledge and competency to better serve the citizens of Texas and surrounding states*
- 09/2018 Classification of Diabetes. Diabetes Seminar, Endocrine Grand Rounds, UTHSCSA, San Antonio, TX (Invited Speaker)
Details: *Endocrine Grand Rounds: 09/2018: Classification of Diabetes. Diabetes Seminar.*
- 09/2018 Hypoglycemia, CIRC course for medical students, UTHSCSA, San Antonio, TX (Invited Speaker)
Details: *Annual Endocrinology Course for Medical Students at UTHSCSA*
- 09/2018 SGLT2 inhibitor Role in Prediabetes, First International Congress of Prediabetes, University of Guanajuato, Leon, Mexico (Invited Speaker)
- 08/2018 Type 1 Diabetes, Cardiometabolic Symposium, UTHSCSA, San Antonio, TX (Invited Speaker)
- 08/2018 Hypoglycemia, Cardiometabolic Symposium, UTHSCSA, San Antonio, TX (Invited Speaker)
- 08/2018 Metabolic Approach to Cardiovascular Diseases, Cardiology Fellows Conference- Cardiology Fiesta Pre-symposium, UTHSCSA- Cardiology Division, San Antonio, TX (Invited Speaker)
- 08/2018 Changing Landscape of CV Treatment, Cardiology Fiesta, UTHSA, San Antonio, TX (Invited Speaker)
- 08/2018 Use of SGLT2i, implications in CV, Renal and T2DM, Cardiorenal symposium, UTHSCSA Nephrology and Cardiology Divisions, San Antonio, TX
- 07/2018 Diabetes Epidemiology and Classification, Graduate Student Physiology Course, UTHSCSA, San Antonio, TX (Invited Speaker)
Details: *Annual course*
- 07/2018 Challenges in managing Cardio Renal Metabolic Patients: A roundtable Interaction with Experts, Satellite Program for 3rd Annual Cardio Renal Connections, UTHSCSA, San Antonio, TX (Panel)
- 07/2018 Diagnostic Criteria of T2DM, Clinicians of Excellence, University Tecnologico de Monterrey, Guadalajara, Mexico (Invited Speaker)
Details: *A program for continuous education for primary care providers around the country in Mexico, teleconferenced to 8 universities. Guadalajara, Mexico July 7, 2018.*
- 07/2018 Individualized treatment of T2DM as the cornerstone in the therapeutic success, Clinicians of Excellence, University Tecnologico de Monterrey, Guadalajara, Mexico (Invited Speaker)
Details: *A program for continuous education for primary care providers around the country in Mexico, teleconferenced to 8 universities. Guadalajara, Mexico July 7, 2018.*
- 07/2018 Update in genetics in Type 2 Diabetes, Clinicians of Excellence, University Tecnologico de Monterrey, Guadalajara, Mexico (Invited Speaker)
Details: *A program for continuous education for primary care providers around the country in Mexico, teleconferenced to 8 universities. Guadalajara, Mexico July 7, 2018.*
- 06/2018 Diabetes Self-Management Education and Support—Embracing Data and Digital Dialogue Advances, 78th Scientific Sessions American Diabetes Association, American Diabetes Association, Orlando, FL (Panel)
Details: *Chair Oral Sessions: American Diabetes Association. Orlando, FL 2018 Session Title: Diabetes*

*Self-Management Education and Support—Embracing Data and Digital Dialogue Advances Day/Time:
Monday, June 25, 2018, 8:00 AM - 10:00 AM Session Location: W204*

- 03/2018 Cutaneous manifestations of endocrine disorders, Endocrine Grand Rounds, UTHSCSA, San Antonio, TX (Invited Speaker)
Details: *Oral Presentation*
- 12/2017 The Growing Problem of Type 2 Diabetes, Texas Podiatric Medical Association, Diabetic Foot Update, TPMA, San Antonio, TX (Invited Speaker)
Details: *Oral Presentation*
- 12/2017 Mono and Combination of Therapies for the Management of Type 2 DM, Texas Podiatric Medical Association, Diabetic Foot Update, TPMA, San Antonio, TX (Invited Speaker)
Details: *Oral Presentation*
- 11/2017 Ketones as a potential super-fuel for the heart, SMNE 2017. Mexican Society of Endocrinology and Nutrition, Boca del Rio, Mexico (Invited Speaker)
Details: *Oral Presentation*
- 09/2017 SGLT2 inhibition and stimulation of endogenous glucose production, Nephrology/ transplant research meeting (Transplant Research Enterprise Group-TREG), UTHSCSA, San Antonio, TX (Invited Speaker)
- 06/2017 Endogenous glucose production increase with SGLT2 inhibition is unchanged by denervation in renal transplant patients, 77th Scientific Sessions American Diabetes Association, American Diabetes Association, San Diego, CA (Sole Presenter)
Details: *Late Breaking Abstract*
- 05/2017 Research “Research Update in SGLT2 inhibition”, Diabetes symposium. Innovations in Diabetes Treatment and Research, UTHSCSA, San Antonio (Invited Speaker)
Details: *Endocrinologists from Brazil come to the Texas Diabetes Institute for a Research Update in Type 2 Diabetes May 19-20, 2017*
- 09/2016 Dapagliflozin: Metabolic and Molecular Mechanisms of Increased Plasma Ketones, European Association for the Study of Diabetes (EASD), Late Breaking Abstract- Oral Presentation, European Association for the Study of Diabetes (EASD), Berlin, Germany (Sole Presenter)
Details: *Late Breaking Abstract- Oral Presentation*
- 04/2016 Dapagliflozin: Metabolic and Molecular Mechanisms of Increased Plasma Ketones, Endocrine Society Meeting, Endocrine Society, Boston, MA (Sole Presenter)
Details: *Oral Presentation*
- 01/2016 Dapagliflozin Improves lipid oxidation, but Decreases ATP synthesis and increases plasma ketones, Second Annual Endocrine Fellow Foundation Research Meeting, Endocrine Fellow Foundation, Dallas, TX (Sole Presenter)
Details: *Oral Presentation*
- 05/2015 Dapagliflozin improves Beta Cell Function and Insulin Sensitivity in Type 2 DM, AACE 24th Annual Scientific Meeting, American Association of Clinical Endocrinologists (AACE), American Association of Clinical Endocrinologists Meeting, Nashville, TN (Sole Presenter)
Details: *Late-Breaking Oral Presentation*
- 01/2015 Dapagliflozin Improves Beta Cell Function and Insulin Resistance Through a Novel Mechanism, Endocrine Fellows Foundation Meeting, Endocrine Fellows Foundation (EFF), San Antonio, TX (Sole Presenter)
Details: *Poster Presentation*
- 03/2014 Impaired Left Ventricular Diastolic Function (LVDF) Is Associated with Myocardial Insulin Resistance in Patients with Type 2 Diabetes Mellitus (T2DM), 74th Scientific Sessions American Diabetes Association, American Diabetes Association, San Francisco, CA (Co-Presenter)
Details: *Poster Presentation*
- 06/2013 Lowering of the plasma glucose concentration with SGLT2 Inhibitor, Dapagliflozin, Improves Whole Body Insulin Sensitivity in T2DM individuals, 73rd Scientific Sessions American Diabetes Association, American Diabetes Association, Chicago, IL (Co- Presenter)

Details: Oral Presentation

- 10/2012 Mechanisms of glucose lowering in type 2 diabetes patients treated with sitagliptin alone or in combination with metformin: a double tracer study, European Association for the Study of Diabetes Meeting, European Association for the Study of Diabetes, Berlin, Germany (Sole Presenter)
Details: Oral Presentation
- 06/2012 Pioglitazone Improves Myocardial Glucose Uptake and Myocardial Blood Flow in Type 2 Diabetic Subjects, 72nd Scientific Sessions American Diabetes Association, American Diabetes Association, Philadelphia, PA (Co-Presenter)
Details: Oral Presentation
- 06/2012 Postprandial Incretin, Insulin and Glucagon Secretion in T2DM Patients Treated with Sitagliptin Alone or in Combination with Metformin, American Diabetes Association, American Diabetes Association, Philadelphia, PA (Co-Presenter)
- 06/2012 Relationship Between Pericardial, Mediastinal Fat and Whole Body and Myocardial Glucose Uptake, 72nd Scientific Sessions American Diabetes Association, American Diabetes Association, Philadelphia, PA (Co-Presenter)
- 06/2011 Effect of plasma glucose reduction by selective SGLT2 inhibition on mitochondrial dysfunction and impaired insulin signaling/sensitivity in T2DM, Endocrine Fellow Foundation Forum, San Diego, CA (Sole Presenter)
Details: Oral Presentation
- 06/2011 Potential Role of Insulin Signaling Pathways in Vascular Smooth Muscle Cell Migration Proliferation and Inflammation, 71st Scientific Sessions American Diabetes Association, American Diabetes Association, San Diego, CA (Co-Presenter)
- 06/2007 Prevalence of metabolic syndrome according to different diagnostic criteria in the Omani Family Study, 67th Scientific Sessions American Diabetes Association, American Diabetes Association, Chicago, IL (Sole Presenter)
Details: Poster Presentation

RESEARCH GRANTS:

Federal

Project #:	NIH- 1R01 DK107680-06A1
Funding Agency:	National Institutes of Health
Title:	NIH- 1R01 DK107680-06A1 SGLT2 INHIBITION, KETONES AND CARDIOVASCULAR BENEFIT
Status:	PRE- AWARD
Period:	04/2022 – 03/2027
Role:	Co-Investigator
% Effort:	20
Total Costs:	\$3,884,473.00
Grant Detail:	Significance: Elevated plasma ketone levels following initiation of SGLT2 inhibitor therapy in high risk T2DM individuals with HFrEF provide an energy-rich fuel which is taken up with great avidity by the myocardium, and result in improved LV diastolic and systolic function. If correct, the SGLT2i -induced rise in plasma ketone concentration could explain, at least in part, the reduction in HFrEF and CV benefit observed in multiple SGLT2i trials.
Project #:	NIH- 1R01 DK1076
Funding Agency:	National Institutes of Health
Title:	NIH- 1R01 DK107680-01A1 SGLT2 INHIBITION AND STIMULATION OF ENDOGENOUS GLUCOSE PRODUCTION
Status:	Complete
Period:	01/2016 - 01/2021
Role:	Co-Investigator
% Effort:	20

Total Costs: \$2,595,258.00
Grant Detail: Significance: In T2DM individuals, increased basal rate of EGP and impaired suppression of EGP following a meal are important pathophysiologic abnormalities that contribute to fasting and postprandial hyperglycemia. Thus, understanding the factors that regulate EGP is key to understanding normal glucose homeostasis and development of hyperglycemia in T2DM. We and others have demonstrated that glucosuria produced by SGLT2 inhibition stimulates an increase in EGP, suggesting the presence of a strong interaction between the kidney and liver, i.e. "a reno-hepatic axis" that coordinates the regulation of EGP and plasma glucose concentration. The present study will provide evidence for the presence of this previously unrecognized reno-hepatic axis and define the mechanisms which underlie the interaction between the kidney and liver, in addition to providing novel insights concerning the regulation of glucose homeostasis.

Project #: 5R01DK24092
Funding Agency: NIH
Title: REGULATION OF HEPATIC AND PERIPHERAL METABOLISM: Protocol IV A. Effect of Plasma Glucose Reduction by Selective SGLT2 Inhibition on Mitochondrial Dysfunction and Impaired Insulin Signaling/Sensitivity in T2DM
Status: Complete
Period: 06/2011 - 06/2013
Role: Fellowship
% Effort: 60
Total Costs: \$1,055,111.00
Grant Detail: 2011-2013 University of Texas Health Science Center, San Antonio, Texas. Post-Doctoral Research Fellow PI: Ralph A. DeFronzo, MD
REGULATION OF HEPATIC AND PERIPHERAL METABOLISM: Effect of Plasma Glucose Reduction by Selective SGLT2 Inhibition on Mitochondrial Dysfunction and Impaired Insulin Signaling/Sensitivity in T2DM. NIH sponsored trial. 2011-2013. UTHSCSA and Audie L. Murphy VA Hospital.
Involvement: Primary researcher for day-to-day activities involved with the protocol. I performed procedures (OGTT, euglycemic-hyperinsulinemic clamp with radioactive tracer for glucose, determination of endogenous glucose production), order laboratory, equipment/supplies, collect samples, scheduled appointments and visits with other health care professionals, data collection, quality assurance, performed data analysis and present information at regularly scheduled meetings with principal investigator.
Completed/Published.

Private

Project #:
Funding Agency: Doris Duke Charitable Foundation
Title: Doris Duke Charitable Foundation Award. SGLT2 inhibitors, Ketones and Cardiovascular Benefit in Muscle and Exercise
Status: Active
Period: 07/2021 - 06/2024
Role: Principal Investigator
% Effort: 40
Total Costs: \$495,000.00
Grant Detail: The primary goal of this research is to test whether elevated plasma ketone levels following initiation of SGLT2i therapy in high risk T2D individuals with HFrEF will improve muscle bioenergetics, cardiopulmonary function, exercise capacity and quality of life. The secondary objective is to determine whether improvements in physical function, exercise capacity and quality of life are linked to (i) changes in skeletal muscle ketone uptake (PET scan) and bioenergetics (MRS); and/or (ii) cardiac muscle ketone uptake (PET) and LV systolic and diastolic function (MRI), which may be the basis for the beneficial effects of SGLT2 inhibitors

Project #:
Funding Agency: San Antonio Older Americans Independence Center Grant
Title: Effect of SGLT2 inhibition on aging-related biomarkers in older obese adults with prediabetes
Status: Active
Period: 06/2019 - 06/2022

Role: Principal Investigator
% Effort: 10
Total Costs: \$50,000.00
Grant Detail: Pilot and Exploratory Studies Of Core (PESC) of the San Antonio Older Americans Independence Center Grant. Effect of SGLT2 inhibition on aging-related biomarkers in older obese adults with prediabetes. Amount \$ 50,000 One Year with option of 2nd year renewal. Principal Investigator.
Rationale: Inhibitors of the sodium-glucose co-transporter (SGLT2) are FDA-approved for the treatment of type 2 diabetes (T2DM). Their mechanism of action involves lowering of blood glucose concentration secondary to increased glucose excretion by the kidney. These drugs also improve body weight, blood pressure, and cardiac function. Based on these pleiotropic effects, including its calorie restriction-mimetic properties, we hypothesize that SGLT2 drugs will impact several basic aging-related processes, including reduction in oxidative damage to DNA and proteins, decrease in advanced glycation end product (AGE) and receptors for AGE (RAGE), and preventing of cellular senescence, and mitochondrial dysfunction.

Project #: CIP-00001-R07
Funding Agency: Medality Medical
Title: Investigational Mesenteric Visceral Lipectomy for Type 2 Diabetes (IMVL-T2D): 1-Year Safety
Status: Active
Period: 02/2019 - Present
Role: Co-Investigator
Total Costs: \$1,380,536.00
Grant Detail: The purpose of the IMVL-T2D Study is to demonstrate the safety of the MVL procedure, to determine if the MVL procedure improves glycemic control and insulin sensitivity in subjects with type 2 diabetes, and to examine if it causes significant degree of body weight loss, over a one year period.
Study Hypothesis: Surgical removal of mesenteric visceral fat improves insulin sensitivity as measured by hyperinsulinemic euglycemic clamp, improves glycemic control of T2D as measured by HbA1c, and causes body weight loss.
Objectives:
Primary: Assess the safety and efficacy of the MVL procedure; safety is defined as the absence of any serious adverse events during or after the procedure, and efficacy is defined as improvement of insulin sensitivity and improvement in the glycemic control of T2D as measured by hyperinsulinemic euglycemic clamp and HbA1c 12 months after MVL. These outcome measures as well as secondary outcomes will also be evaluated at 6 months, in a planned interim analysis.
Secondary: To determine if the MVL procedure results in a significant degree of body weight loss

Project #: HSC20180077
Funding Agency: Max and Minnie Voelcker Foundation
Title: Voelcker Fund Young Investigator Award. SGLT2 inhibitors, Ketones and Cardiovascular Benefit. Protocol I and II
Status: Active
Period: 07/2018 - 06/2021
Role: Principal Investigator
% Effort: 5%
Total Costs: \$450,000.00
Grant Detail: AIM: In the EMPA-REG OUTCOME trial, the SGLT2 inhibitor empagliflozin significantly reduced cardiovascular mortality and hospitalization for heart failure in high-risk patients with type 2 diabetes; however, the mechanism (s) responsible for these cardiovascular benefits remain undefined. The ketone hypothesis (shift from glucose to the more fuel-efficient beta-hydroxy-butyrate) has been proposed to explain these cardiovascular benefits of SGLT2 inhibitor therapy. However, clinical studies to support this hypothesis are lacking. In the present study, I will use cardiac magnetic resonance imaging (MRI) and positron emission tomography (PET)/ 18F-2-deoxyglucose to examine the effect of physiologic and pharmacologic increases in plasma beta-hydroxy-butyrate concentrations on cardiac function and myocardial glucose metabolism in patients with type 2 diabetes and Class II-III New York Heart Association (NYHA) heart failure. In parallel studies, I will employ cardiac MRI and PET/11C-beta-hydroxy-butyrate to examine the effects of

SGLT2 inhibitor therapy on cardiac ketone metabolism in these patients. Improvements in cardiac function will be related to increase myocardial uptake and metabolism of beta-hydroxy- butyrate. The results of these studies will provide new insights for the “ketone hypothesis” and metabolic interventions for better treatment of diabetic patients with heart failure, ultimately resulting in reduced hospitalization, decreased mortality/disability, and reduced cost.

Project #: HSC20180077
Funding Agency: Merck -Investigator Studies Program (MISP)
Title: Merck Investigator Studies Program. SGLT2 inhibitors, Ketones and Cardiovascular Benefit. Protocol I
Status: Complete
Period: 07/2018 - 06/2021
Role: Co-Investigator
% Effort:
Total Costs: \$960,876.00
Grant Detail: Merck Investigator Studies Program. SGLT2 inhibitors, Ketones and Cardiovascular Benefit. Protocol I
Role: Sub Investigator. Date 07/2018- present.
AIM: To examine the effect of an increase in plasma beta-hydroxy-butyrate levels, spanning the physiologic and pharmacologic range (+0.5, +2.0, and +5.0 mmol/L), on: (i) parameters of left ventricular (LV) systolic and diastolic function utilizing cardiac magnetic resonance imaging (MRI) and (ii) myocardial glucose uptake using positron emission tomography (PET) with 18F-fluoro-2-deoxy-D-glucose in type 2 diabetic patients with Class II-III New York Heart Association (NYHA).

Project #:
Funding Agency: Endocrine Society
Title: Clinical Fellows Abstract in Diabetes - Award by the Endocrine Society 2016
Status: Complete
Period: 04/2016 - 04/2016
Role: Fellowship
% Effort:
Total Costs: \$1,500.00
Grant Detail:

Project #: 7-11-MI-03
Funding Agency: American Diabetes Association
Title: 7-11-MI-03, American Diabetes Association. ADA Mentor Minority Based Postdoctoral Fellowship Program
Status: Complete
Period: 07/2011 - 06/2013
Role: Fellowship
% Effort: 100
Total Costs: \$128,250.00
Grant Detail:

Project #:
Funding Agency: Endocrine Fellow Foundation
Title: Endocrine Fellow Foundation. Fellows Development Research Grant in Diabetes, Obesity and Fat Cell Biology
Status: Complete
Period: 01/2010 - 12/2010
Role: Co-Investigator
% Effort: 60
Total Costs: \$20,000.00
Grant Detail: Endocrine Fellow Foundation. Fellows Development Research Grant in Diabetes, Obesity and Fat Cell Biology
Role: Principal Investigator. Dates: 01/01/10-12/31/10
Effect of plasma glucose reduction by selective SGLT2 inhibition on mitochondrial dysfunction and impaired insulin sensitivity and beta cell dysfunction in T2DM

Project #:
Funding Agency: Merck Pharmaceuticals
Title: Mechanisms of glucose lowering of sitagliptin alone or in combination with metformin

Status: in T2DM Complete
Period: 01/2009 - 01/2012
Role: Research Fellow
% Effort: 40
Total Costs: \$533,897.00
Grant Detail: Mechanisms of Glucose Lowering Effects of Sitagliptin and Metformin Alone and in Combination in Patients with Type 2 Diabetes Mellitus.
 Involvement: Primary researcher for day to day activities associated with protocol. Performed procedures(Double tracer mixed-meal tolerance tests, radioactive tracer for endogenous glucose production and oral glucose absorption), ordered laboratory, equipment, supplies, collected samples, scheduled appointments and visits with other health care professionals, data collection, quality assurance, data analysis and presented information at regularly scheduled meetings with principal investigator. Completed/Published.

SERVICE

ADMINISTRATIVE RESPONSIBILITIES:

<u>Dates</u>	<u>Type</u>	<u>Description</u>	<u>Role</u>
10/2021-Present		Chief, Endocrinology Division.	Division Chief

Under the supervision of the Department Chair, as the Chief of the Endocrinology Division my responsibilities are as follows:

I. CLINICAL CARE GOALS

- 1. Actively strengthen the Core Faculty of the Endocrinology Division.*
- 2. Developing of multi-disciplinary through collaboration with multiple specialties and division within and outside of the medicine department and expansion of the existing endocrinology and diabetes clinics.*
- 3. Development of a strong inpatient endocrinology consult service and glycemic control team.*

II. CLINICAL RESEARCH GOALS

Integration of the academic physicians and trainees into translational and clinical research in diabetes, obesity, metabolism, lipids, and other endocrine related disorders.

- 1.1 Expand relationships and sense of community across all clinical and research faculty.*
- 1.2. Encouragement and mentoring of young faculty to generate translational and clinical research ideas and pursue early-career funding.*
- 1.3. Mentor faculty that currently holds junior grants to apply for federal funding as they grow towards independence.*
- 1.4. Continuously encourage and support partnership with intra-mural and extra-mural clinical and research groups for the development of joint research projects.*
- 1.5. Access to development programs aimed to enhance grantsmanship skills for junior faculty.*
- 1.6. Promote generation and publication of scientific material including case reports, reviews, and original research.*
- 1.7 Secure Federal and Private Research funds thought investigator initiated and industry research trials and continue expanding the research portfolio of the division and the department as well as scientific discovery.*

III. EDUCATIONAL GOALS

In close collaboration with the Program Director, our educational goal is to prepare physicians in endocrinology for excellence in clinical practice and research through innovative training programs, while enhancing the quality and reputation of the endocrinology fellowship program and maintaining a fully accredited, two-year fellowship training program.

We will promote the science of education by encouraging interactive and innovative approaches to medical education, while supporting the development of our clinician educators. We will aim to become a top nationally ranked program based on the annual in-training exam (ITE).

IV. PROFESSIONAL DEVELOPMENT GOALS

Our professional development goals and initiatives are to enhance the professional growth of our faculty through the breath of academic opportunities including clinical, educational, research and leadership programs.

- 1. Promoting Continuous Medical Education (CME).*
- 2. Mentoring and Leadership.*
- 3. Improve communication among leadership and faculty.*
- 4. Build relationships and sense of community across all divisions and sites.*
- 5. Enhance academic advancement by aligning clinical expectations with academic priorities.*
- 6. Promoting and encouraging interest in translational and clinical research as mentioned in Section II.*
- 7. Promoting and encouraging development of Quality Improvement projects (QI) that can be implemented in different areas of clinic, research and education.*
- 8. Promote generation and publication of scientific material including case reports, reviews and original research.*
- 9. Promote lecturing and supervising students, residents and fellows assigned to clinical rotations and assist in maintaining a fully accredited, two-year fellowship training program.*

<u>Dates</u>	<u>Type</u>	<u>Description</u>	<u>Role</u>
02/2019-Present		Medical Director- Diabetes Clinic	Medical Director

Under the supervision of the Department Chair, as the Medical Director of the Diabetes Clinic at the Medical Arts and Research Center, my responsibilities are as follows:

- 1. Monitoring and improving the level of care in our clinic and help reduce our operational costs over time.*
- 2. Work along with the Clinic Operations Manager to implement strategies that enhance patient care and improve our medical practice. This includes amendment and replacement of medical policies. Management of our team of physicians and ensure that employees are complying with UT policies when providing care. Working directly with providers to educate them on our care process and determine what can be done to improve overall care quality.*
- 3. Participation on recruitment and selection process of medical and paramedical providers.*
- 4. Clinical supervision of clinic staff, including performance appraisals and feedback.*
- 5. Advise purchase of medical equipment.*
- 6. Planning and developing of new clinical programs, sign off on charts, supervise providers including Physicians and Registered Dietitians.*
- 7. Guidance on management of complex clinical cases to junior faculty.*
- 8. Assist to other providers if clinic flow is deficient or clinic is backed up.*
- 9. Be a role model for other providers keeping the highest levels of professionalism, communication and interaction with staff, providers and patients.*
- 10. Assist staff with treatment modalities and devices in the diabetes clinic.*
- 11. Promote team building between providers and staff.*
- 12. Participate in regular meetings with providers and staff to discuss barriers, challenges and opportunities to improve clinic flow and patient care.*
- 13. Approve absences and vacations of providers and route to the Department Chair.*
- 14. Collaboration with providers of other clinics to coordinate patient care, promote collaboration with other clinic medical directors, attend monthly medical director meetings, encourage research collaborations, multidisciplinary patient management.*
- 15. Developing SOP manuals and review with staff and providers to improve clinic flow and patient care.*
- 16. Reporting to clinic Leadership Team*

<u>Dates</u>	<u>Type</u>	<u>Description</u>	<u>Role</u>
10/2021-Present		Medical Director- Endocrinology Clinic	Medical Director

Under the supervision of the Department Chair, as the Medical Director of the Endocrinology Clinic at the Medical Arts and Research Center, my responsibilities are as follows:

- 1. Monitoring and improving the level of care in our clinic and help reduce our operational costs over time.*
- 2. Work along with the Clinic Operations Manager to implement strategies that enhance patient care and improve our medical practice. This includes amendment and replacement of medical policies. Management of our team of physicians and ensure that employees are complying with UT*

policies when providing care. Working directly with providers to educate them on our care process and determine what can be done to improve overall care quality.

3. Participation on recruitment and selection process of medical and paramedical providers.
4. Clinical supervision of clinic staff, including performance appraisals and feedback.
5. Advise purchase of medical equipment.
6. Planning and developing of new clinical programs, sign off on charts, supervise providers including Physicians and Registered Dietitians.
7. Guidance on management of complex clinical cases to junior faculty.
8. Assist to other providers if clinic flow is deficient or clinic is backed up.
9. Be a role model for other providers keeping the highest levels of professionalism, communication and interaction with staff, providers and patients.
10. Assist staff with treatment modalities in the endocrinology clinic
11. Promote team building between providers and staff.
12. Participate in regular meetings with providers and staff to discuss barriers, challenges and opportunities to improve clinic flow and patient care.
13. Approve absences and vacations of providers and route to the Department Chair.
14. Collaboration with providers of other clinics to coordinate patient care, promote collaboration with other clinic medical directors, attend monthly medical director meetings, encourage research collaborations, multidisciplinary patient management.
15. Developing SOP manuals and review with staff and providers to improve clinic flow and patient care.
16. Reporting to clinic Leadership Team

PATIENT CARE:

<u>Dates</u>	<u>Type</u>	<u>Description</u>	<u>Role</u>
01/2018-Present	Outpatient	Diabetes Clinic at the MARC	Attending Physician
10/2017-Present	Inpatient	Inpatient Endocrinology Service <i>Mentoring and Staffing Endocrinology Fellows regarding general endocrinology and diabetes in the inpatient service at University and VA hospital</i>	Attending Physician

SERVICE TO THE PROFESSION:

<u>Dates</u>	<u>Type</u>	<u>Description</u>	<u>Role</u>
07/2018-07/2021	National	Associate Editor- Medical Journal <i>Associate Editor. Diabetes Spectrum. American Diabetes Association</i>	Associate Editor

SERVICE TO THE PUBLIC:

<u>Dates</u>	<u>Type</u>	<u>Description</u>	<u>Role</u>
2021	Public	<i>Wear the Gown Winter special. Living in a pandemic</i> https://youtu.be/tilxOErpl4c	Guest Speaker
2021	Public	<i>COVID-19 update: Does COVID cause diabetes? University Health (universityhealthsystem.com)</i> https://youtu.be/tilxOErpl4c	Guest Speaker
2021	Public	<i>COVID-19 TODAY presentation, including providing information about COVID-19 as related to diabetes, children, and the latest update on vaccines 3/4/2021</i> https://attendee.gotowebinar.com/recording/5069704493061392907	Guest Speaker
11/2020-11/2020	Public	Medical researcher encourages people with diabetes to take extra precautions during this flu season.	Guest Speaker

		Community service/awareness. TV interview. 2020- Medical researcher encourages people with diabetes to take extra precautions during this flu season. KSAT 12 Nov 12, 2020. https://www.ksat.com/sa-live/2020/11/13/medical-researcher-encourages-people-with-diabetes-to-take-extra-precautions-this-flu-season/	
09/2020-09/2020	Public	CDC shows number of people who die from COVID-19 and having diabetes, group looks to help Community Service/Awareness. TV Interview. CDC shows that the number of people who have diabetes and die from COVID-19 is markedly increased. Fox San Antonio 09/10/2020. https://foxsanantonio.com/news/local/cdc-shows-number-of-people-who-die-from-covid-19-and-having-diabetes-group-looks-to-help	Guest Speaker
07/2020-07/2020	Public	Patients with uncontrolled diabetes most at risk of COVID-19 complications. Community Service/Awareness. TV interview. 2020- Solis-Herrera C. Patients with uncontrolled diabetes most at risk of COVID 19 complications. Fox News KBBS channel 29 07/2/2020 https://foxsanantonio.com/news/local/covid-19-patients-with-uncontrolled-diabetes-most-at-risk	Guest Speaker
06/2020-06/2020	Public	Second wave of covid-19 cases in Bexar County poses serious threats to diabetes patients. Community Awareness/Service. TV interview. 2020- Solis-Herrera C. Second wave of covid-19 cases in Bexar County poses serious threats to diabetes patients. KSAT 12 06/15/2020 https://www.ksat.com/news/local/2020/06/15/second-wave-of-covid-19-cases-in-bexar-county-poses-serious-threat-to-diabetes-patients-doctor-says/	Guest Speaker
05/2020-05/2020	Public	COVID 19 and Diabetes Community Awareness. SA Express News interview. 2020- Solis-Herrera C. COVID 19 and Diabetes. SA Express news. https://www.expressnews.com/news/healthcare/article/UT-Health-San-Antonio-specialist-explains-why-15300786.php?utm_source=newsletter&utm_medium=email&utm_campaign=SAEN_210Report&utm_term=news&utm_content=headlines	Guest Speaker
03/2020-03/2020	Public	Doctor provides proactive tips for diabetic patients during the coronavirus pandemic. Community Awareness. TV Interview. Doctor provides proactive tips for diabetic patients during the coronavirus pandemic. https://www.ksat.com/news/local/2020/03/27/doctor-provides-proactive-tips-for-diabetic-patients-during-the-coronavirus-pandemic/	Guest Speaker
03/2019-03/2019	Public	Diabetes research in San Antonio could change lives across the country Community Service/Awareness. TV Interview. Diabetes research in San Antonio could change lives across the country. NEWS4SA https://news4sanantonio.com/news/local/diabetes-research-in-san-antonio-could-change-lives-across-the-country	Guest Speaker
11/2018-11/2018	Public	Recognizing personalities that have contributed in the fight against diabetes in San Antonio Community Service/Awareness. TV Interview. Recognizing personalities that have contributed in the fight against diabetes in San Antonio. Wall of Honor. University Health System. Univision41 San Antonio https://www.univision.com/san-antonio/kwex/noticias/homenajes-y-reconocimientos/reconocen-a-personas-que-han-contribuido-en-la-lucha-contra-la-diabetes-en-san-antonio-video	Guest Speaker
08/2018-08/2018	Public	Meet the experts: Dr Solis-Herrera. University of Texas Health San Antonio Community Awareness. UT Health San Antonio. 2019- Solis-Herrera, C. Meet the experts: Dr Solis-Herrera. University of Texas Health San Antonio https://www.youtube.com/watch?v=JSackTJNmF4	Guest Speaker

GRANT REVIEWS:

<u>Dates</u>	<u>Granting Agency</u>	<u>Panel Name</u>	<u>Role</u>
04/2021-05/2021	Pilot and Exploratory Studies Of Core (PESC) of the San Antonio Older Americans Independence Center Grant.	Pilot and Exploratory Studies of Core (PESC) of San Antonio Older Americans	Internal Reviewer
01/2020-03/2020	Juvenile Diabetes Research Foundation (JDRF)	Safe and Effective Use of SGLT Inhibitors for Type I Diabetes RFA Review	External Reviewer

PROFESSIONAL AFFILIATIONS:

<u>Dates</u>	<u>Organization</u>
04/2020-Present	American Heart Association
01/2015-Present	Endocrine Society
01/2015-Present	European Association for the Study of Diabetes
01/2014-Present	American Diabetes Association
01/2013-01/2015	American College of Physicians
01/2013-01/2014	American Medical Association
01/2007-01/2012	Mexican College of Internal Medicine
01/2007-01/2012	Mexican Counsel of Internal Medicine
01/2007-Present	American Association of Clinical Endocrinologists

COMMITTEES (OTHER):**SCHOOL**

<u>Dates</u>	<u>Committee</u>	<u>Role</u>
10/2021-Present	University Health System P&T Committee Sub-committee for Diabetes and Endocrinology	Member

Purpose:

The purpose of the UHS P&T Subcommittees is to improve the function and efficiency of the P&T Committee. Multidisciplinary subcommittee members play a vital role in the formulary management process by reviewing and making recommendations to the P&T Committee members on medication-related issues within their respective areas of expertise.

Structure:

The Chair of the P&T Committee will provide oversight of subcommittee establishment, membership, and member roles. Each subcommittee will be comprised of a physician chair, pharmacist facilitator, and other voting and non-voting members representing the respective practice areas. Voting members for any formulary changes will include physician and pharmacist members of the subcommittee. Physicians must comprise at least 50% of the vote. Non-voting members may include nurses, dietitians, respiratory therapists, or other relevant interdisciplinary members, as well as pharmacy residents. Subcommittees convene as needed based on the workload of assigned tasks or initiatives. Some subcommittees meet on a routine basis, while others meet ad hoc.

Responsibilities:

Each subcommittee will be assigned the following medication-related tasks:

- 1. Formulary additions, deletions, or changes*
- 2. Guideline/protocol/algorithm development or maintenance*
- 3. Drug class reviews*

4. Drug Utilization Evaluation (DUE) topic and outcomes identification

04/2019-Present	Committee member. Endocrinology Program evaluation (PCC), University of Texas Health at San Antonio, Long School of Medicine, Medicine	Member
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The Program Evaluation Committee (PCC) is part of the Accreditation Council for Graduate Medical Education (ACGME). This committee is comprised of the Committee Chair, Program Director and Faculty members of the Endocrinology Division. The committee meets every 6 months to evaluate the fellows performance, faculty development and program quality toward the goal of improving the program, and not to track individual residents for remediation.

04/2019-Present	Committee Chair. Clinical Competencies Committee (CCC), University of Texas Health San Antonio, Long School of Medicine, Medicine	Chair
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The Clinical Competence Committee (CCC) is part of the Accreditation Council for Graduate Medical Education (ACGME). This committee is comprised of the Committee Chair, Program Director and Faculty members of the Endocrinology Division aimed to evaluate every 6 months the competencies of the clinical endocrinology fellows, including milestones and progression during fellowship and clearance for promotion to second year and graduation.