



DEPARTMENT OF HEALTH AND HUMAN SERVICES

NIH Intramural Program Staff Clinician Curriculum Vitae



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Name: Skand Shekhar

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Place of Birth: New Delhi, India

Education and Postdoctoral Training:

2008-2014 M.B.B.S. (Doctor of Medicine)- University College of Medical Sciences,
University of Delhi, New Delhi, India

2015-2018 Internal Medicine Residency- Rutgers Robert Wood Johnson Medical
School, Saint Peter's University Hospital, New Brunswick, NJ

2018-2020 Clinical & Research Fellowship, Endocrinology and Metabolism, National
Institutes of Health (NIH), Bethesda, MD

2021-2023 Master of Health Sciences (Clinical Research)- Duke University, Durham,
North Carolina, United States

Faculty Academic Appointments:

2020- Faculty Member, NIH Endocrinology Training Program (IETP)

Appointments at Hospitals/Affiliated Institutions:

Attending Physician, NIH Clinical Center Endocrinology & Blood Glucose Management
Consultation Service

Attending Physician, NIH Mobile Suburban Endocrine Clinic

Other Professional Positions:

Deputy Medical Director (Acting), Clinical Research Unit, NIEHS, NIH

A. Positions and Honors

Major Administrative Leadership Positions:

Local

2017-2018 Chief Resident- Internal Medicine Residency, Rutgers Robert Wood Johnson Medical School, Saint Peter's University Hospital, New Brunswick, NJ

Regional N/A

National N/A

International N/A

Committee Service:

Local

2017-2018 Internal Medicine Faculty Committee. Rutgers Robert Wood Johnson Medical School, Saint Peter's University Hospital, New Brunswick, NJ

2017-2018 Graduate Medical Education Committee. Rutgers Robert Wood Johnson Medical School, Saint Peter's University Hospital, New Brunswick, NJ

2018-2020 Clinical Fellows Committee. National Institutes of Health, Bethesda, MD

2021 Summer Internship Program Judging Committee, NIEHS, National Institutes of Health, Durham, NC

2021 Staff Scientist Search Committee. NIEHS, National Institutes of Health, Durham, NC

2021-2022 Fellowship Recruitment Committee. Inter-Institute Endocrinology Fellowship, NIEHS, NIH

2021- 2022 Clinical Competency Committee, Inter-Institute Endocrinology Fellowship, NIEHS, NIH

2022-2023 Program Evaluation Committee, Inter-Institute Endocrinology Fellowship, NIEHS, NIH

2022-2023 Fellowship Recruitment Committee. Inter-Institute Endocrinology Fellowship, NIEHS, NIH

2022-2023 NIEHS Electronic Laboratory Notebook Committee, NIH

2022-2023 Research and Career Development Committee Dr. Sanjay Jumani, NICHD, IETP, NIH

2022-2023 Research and Career Development Committee Dr. Rachael Klein, NIDDK, IETP, NIH

Regional

2022 American College of Physicians, North Carolina Chapter Scientific Poster Judging Committee

National

International

2022-2025 Endocrine Society- Member, Special Programs Committee

Professional Societies:

- American College of Physicians (ACP)
- American Association of Clinical Endocrinologists (AACE)
- The Endocrine Society
- Erdheim Chester disease Global Alliance (ECDGA) (recognized by ECDGA as being among the 3 endocrinologists in the world with expertise in ECD)

Grant Review Activities: N/A

Editorial Activities:

1. **Associate Editor:** [Endocrine Research](#)
2. **Ad hoc Reviewer**

British Medical Journal Case Reports
Canadian Medical Association Journal Open
Canadian Medical Association Journal
Genes
BioMed Central Research Notes
Endocrine and Metabolic Science
Preventive Medicine Reports
World Journal of Surgical Oncology

World Journal of Pediatrics
Theriogenology
Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy
Medicina
International Medical Case Reports Journal
Journal of Inflammation Research
Brain Communications
Case Reports in Endocrinology
Current Oncology
Communications Biology
Journal of Clinical and Diagnostic Research
Tobacco Induced Diseases
Journal of Clinical Endocrinology and Metabolism

Other Editorial Roles N/A

Honors and Prizes:

- 2011-** Indian Council of Medical Research - Short Term Studentship Programme (Award) 2011
- 2016-** Resident Appreciation for Outstanding PGY-2 by Dept. of Medicine, Rutgers Robert Wood Johnson Medical School, Saint Peter's University Hospital, New Brunswick.
- 2017-** Outstanding PGY-2 Annual Award. Dept. of Medicine, Rutgers Robert Wood Johnson Medical School, Saint Peter's University Hospital, New Brunswick.
- 2017-** Best Poster Award, Stanford Society of Bedside Medicine. Palo Alto, CA.
- 2018-** Endocrine Society Outstanding Abstract Award. 2018 Endocrine Society Meeting
- 2018-** Osler Award for Excellence in Clinical Medicine. Dept. of Medicine, Rutgers Robert Wood Johnson Medical School, Saint Peter's University Hospital, New Brunswick.
- 2018-** Clinical Examiner for the Royal College of Physicians (UK), Clinical MRCP examination. New Jersey, USA Center.
- 2019-** Early Careers Forum Travel Award. ENDO 2019 The Endocrine Society, New Orleans, LA.
- 2019-** Outstanding Abstract Award. ENDO 2019. The Endocrine Society, New Orleans, LA.
- 2019-** Presidential Poster Nomination ENDO 2019. The Endocrine Society, New Orleans, LA.
- 2019-** Scientific Judge Post Bac Student Poster Competition for. National Institutes of Health, Bethesda, MD. Apr 2019.
- 2021-** Outstanding Abstract Award. ENDO 2021. The Endocrine Society. Virtual Conference.
- 2021-** International Best Abstract Award. Society for Nuclear Medicine and Molecular Imaging (SNMMI) Annual Meeting 2021. Virtual Conference.
- 2022-** *Dr. Uma Shankdhar* Memorial Oration. UP Diabetes Association, India.
- 2023-** *Dr Phillip Gordon* Best Teacher Award, NIH Endocrinology Fellowship Program (IETP), Bethesda, MD. April 2023.

B. Clinical Care and Quality

Report of Clinical Activities and Innovations

Current Licensure and Board Certification:

Licensure

- Delhi Medical Council (India)- Active (2014- current)
- New Jersey Medical License- Inactive (2018-2019)
- North Carolina Medical License- Active (2019- current)

Board Certification

- 2018 Diplomate of the American Board of Internal Medicine (Internal Medicine)
- 2020 Diplomate of the American Board of Internal Medicine (Endocrinology, Diabetes and Metabolism)

Practice Activities:

1. Attending Physician, NIH Clinical Center Endocrinology & Blood Glucose Management Consultation Service
2. Attending Physician, Suburban Clinic (Mobile Med) Endocrinology Clinic, Gaithersburg, MD

Clinical Innovations:

2018 Code Physical Diagnosis: A Novel Clinical Teaching Activity for Medical Residents and Students

C. Educational Activities and Mentoring

Report of Local Teaching and Training

Teaching of Students in Courses:

Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs):

1. Hyperprolactinemia and Acromegaly for Clinical Fellows, Nov 2022
2. Male reproduction board review. September and Oct 2022
3. Endocrinopathies in pregnancy board review. Sep 2022
4. Turner's syndrome and Transgender Management April 2022
5. Female reproduction endocrine board review Feb 2022
6. PCOS talk for endocrine fellows Jan 2022
7. Hyperprolactinemia and acromegaly Oct 2021
8. Male reproductive system board review Sep 2021
9. Imaging and function of the pituitary gland Aug 2021
10. Lipid metabolism July 2021
11. Oral contraceptives July 2021
12. Male reproduction endocrine board review April 2021

Clinical Supervisory and Training Responsibilities:

1. Preceptor: Endocrine Fellows OP9 Clinic
2. Preceptor: Endocrinology Consultation & Blood Glucose Management Service, NIH Clinical Center
3. Preceptor: Endocrine Fellows Mobil Med Endocrine Clinic

4. Leader: Post clinic conference for the NIH Endocrinology Fellowship program
5. Leader: Inpatient Rounds conference for the NIH Endocrinology Fellowship program

Laboratory and Other Research Supervisory and Training Responsibilities: N/A

Formally Mentored Post-doc IRTAs:

1. Sonal Vaid, MD, Clinical Endocrinology Fellow NIH IETP
2. Rachael Klein, MD, Clinical Endocrinology Fellow NIH IETP

Other Mentored Trainees and Faculty (include students and Pre-doc IRTAs):

1. 2019-2021 Joselyne Tessa Tonleu, BA
2. 2021-2023 Ethan Brown, BS
3. 2022-2023 Gloria Choi, BS
4. 2022-2023 Lindsay Levine, MD candidate

Formal Teaching of Peers (e.g., CME and other continuing education courses):

No presentations below were sponsored by outside entities.

1. *Polycystic Ovarian Syndrome: What Internists Must Know*. St Peter's University Hospital, Rutgers RWJ Medical School. Dept of Medicine. Grand Rounds. Nov 2, 2021.
2. *Endocrine and Metabolic Aspects of Polycystic Ovarian Syndrome*. St Peter's University Hospital, Rutgers RWJ Medical School. Dept of Obstetrics and Gynecology. Grand Rounds. March 18, 2022.
3. *Polycystic Ovarian Syndrome: A Review for Endocrinologists*. Endocrine Society Special Webinar. May 5, 2022. (1000+ registrations from >80 countries worldwide)
4. *Polycystic Ovarian Syndrome: Advances in Diagnosis and Management*. University of Nebraska Medical Center Endocrine Grand Rounds. January 27, 2023.
5. *"Hypogonadism in Men: An Evolving Landscape"* St Peter's University Hospital, Rutgers RWJ Medical School. Dept of Medicine. Grand Rounds. March 21, 2023.
6. *Hormonal Woes- Finding the Right Balance: Endocrine Disorders in Erdheim-Chester Disease*. Annual Patient and Provider Symposium. ECD Global Alliance. Mayo Clinic, Rochester, MN. April 28, 2023

Local Invited Presentations:

No presentations below were sponsored by outside entities

1. Shekhar S, Pande C, Rana H. Two sides of the same coin: a case series of two cardiac tamponades. Research Day, Rutgers Robert Wood Johnson Medical School, Saint Peter's University Hospital, New Brunswick April 2016. Best Poster Award.

Report of Regional, National and International Invited Teaching and Presentations

No presentations below were sponsored by outside entities -

Regional

1. Shekhar S. Immunopathophysiology of Severe COVID-19 in Metabolic Disorders webinar for clinical and basic science researchers at the National Institute of Environmental Health Sciences (NIEHS), NIH. Held via Zoom® on July 23, 2020
2. Skand Shekhar. The Impact of Energy Restriction on Thyroid Hormone Dynamics. Oral presentation. National Institutes of Environmental Health Sciences. Science Day 2020. November 20, 2020. Virtual Meeting Zoom.
3. Skand Shekhar. Gonadotropin secretion before and after surgical cure in men with ACTH-dependent Cushing syndrome. Triangle Consortium for Reproductive Biology 2021. Virtual Meeting.
4. Shekhar S. The Effect of Hypercortisolemia on the Male Reproductive Endocrine Axis: Insights from a Human Disease Model. UNC-Chapel Hill Endocrinology Research Conference. March 23, 2023. Virtual Zoom Meeting.

National N/A

International

1. Shekhar S. *Dr. Uma Shankdhar Oration*. Uttar Pradesh Diabetes (Madhumeah) Association, India. Review of Pharmacotherapy of Type 2 Diabetes. Held via Zoom on May 11, 2022.
2. Shekhar S. COVID-19 Therapeutics and Molecular Biology. Webinar for Biochemistry Researchers in Lucknow, India. Held via Google Meet® on June 6, 2020.
3. Shekhar S. By invitation of the National Academy of Medical Sciences-India. COVID-19 and Metabolic Disorders. Presented as a continuing medical education event (CME) to educate physicians about the pathophysiology and treatment of COVID-19 in patients with metabolic disorders. Attended by 100 physicians engaged in practice and research. Held via Cisco Webex® on October 8, 2020.
4. Shekhar S, Shmouni FH, Gahl W, Estrada-Veras JI, O'Brien K. Hypothyroidism in Erdheim-Chester Disease: Experience from the National Institutes of Health. Oral Presentation. ECD Symposium. Orlando FL. 2018.
5. Joselyne Tessa Tonleu, Skand Shekhar, Chinelo Okigbo, Helen Leka, Anne Kim, Bona Purse, Katie Hirsch, Bin Wei, Brian Stolze, John McGrath, Abbie E Smith-Ryan, Steven J Soldin, Hall E Janet. The Effects of Energy Restriction on Thyroid Hormone Dynamics. The Endocrine Society Meeting 2021. Virtual Meeting. (Oral presentation)
6. Shekhar S, Patel N, Van Hoven AM. Thyrotoxicosis: A decade of inpatient trends in the United States. ENDO-2017: Orlando, FL. April 2017. (Oral Presentation)
7. **Skand Shekhar**, Jorge A. Irizarry-Caro, Ninet Sinaii, William A Gahl, Juvianee I. Estrada-Veras, Rahul Dave, Bernadette R. Gochuico, Georgios Z. Papadakis, Nicholas Patronas, Constantine A. Stratakis, Fady Hannah-Shmouni*, Kevin O'Brien* Abnormalities of Pituitary Imaging and Associated Endocrine Disorders in Erdheim-Chester Disease. Annual International Medical Symposium, ECD Global Alliance. Mayo Clinic, Rochester, MN. April 27, 2023

Report of Education of Patients and Service to the Community

(No presentations below were sponsored by outside entities)

Attending physician at the NIH Mobil Med Suburban charity clinic

Recognition for Educational Activities and Mentoring

D. Research and Scholarly Activities

Report of Funded and Unfunded Projects (investigator-initiated studies could be included here)

Funding Information: N/A

Past N/A

Current

Associate investigator on the following NIH intramural protocols

1. 12-E-0049 -The Molecular Basis of Inherited Reproductive Disorders
2. 12-E-0050 -The Role of Gonadotropin Pulsations in the Regulation of Puberty and Fertility
3. 04-E-0053- Environmental Polymorphisms Registry
4. 20-E-0143- Serological Surveillance for COVID-19 in North Carolina
5. 16-CH-0125- Evaluation of Adults with Endocrine-Related Conditions
6. 16-E-0157- CaREFREE Study (Calorie Restriction, Environment and Fitness: Reproductive Effects Evaluation Study)

Projects Submitted for Funding

1. **Principal Investigator-** Observational Study of Environment and Reproductive Endocrine Effects. NIEHS, NIH

Training Grants and Mentored Trainee Grants N/A

Unfunded Current Projects

- Endocrine Dysfunction in Erdheim-Chester disease

E. Report of Scholarship

Peer reviewed scholarship in print or other media:

Original Peer Reviewed Publications

1. **Shekhar S**, Shah D. Validation of Mid-upper-arm Circumference Cut-off to Predict Severe Wasting in Indian Children. Indian Pediatr. 2012 Jun 8;49(6):496-7. (Impact factor (IF): 1.18)
2. Kumar A, Dewan R, Suri J, Kohli S, **Shekhar S**, Dhole B, Chaturvedi PK. Abolition of endocrine dimorphism in hyperthyroid males? An argument for the positive feedback effect of hyperoestrogenaemia on LH secretion. Andrologia. 2012;44(4):217–225. doi:10.1111/j.1439-0272.2011.01270.x (Impact factor (IF): 1.46)

3. Srivastava S, **Shekhar S**, Bhatia MS, Dwivedi S. Quality of life in patients of coronary artery disease and panic disorder: a comparative study. *Oman Med J*. 2016. (CiteScore 1.2)
4. Dhole B, Gupta S, **Shekhar S**, Kumar A. A Novel Antigonadotropic Role of Thyroid Stimulating Hormone on Leydig Cell-Derived Mouse Leydig Tumor Cells-1 Line. *Ann Natl Acad Med Sci*. 2020;56(1):30-37. doi:10.1055/s-0040-1709091
5. **Shekhar S**, Sinaii N, Irizarry-Caro J, Gahl WA, Estrada-Veras JI, Dave R, Papadakis GZ, Tirosh A, Abel BS, Klubo-Gwiedzinska J, Skarulis MC, Gochuico BR, O'Brien K, Hannah-Shmouni F. Prevalence of Hypothyroidism in Patients With Erdheim-Chester Disease. *JAMA Netw Open*. 2020;3(10):e2019169. (JAMA Open impact factor 13.37)
6. **Shekhar S**, Wurth R, Kamilaris CDC, Eisenhofer G, Barrera FJ, Hajdenberg M, Tessa Tonleu J, Hall JE, Schiffrin EL, Porter F, Stratakis CA, Hannah-Shmouni F. Endocrine Conditions and COVID-19. *Horm Metab Res*. 2020;52(7):471-484. doi:10.1055/a-1172-1352 (HMR impact factor 2.56)
7. Barrera FJ*, **Shekhar S***, (*Co-first authors) Wurth R, Moreno-Pena PJ, Ponce OJ, Hajdenberg M, Alvarez-Villalobos NA, Hall JE, Schiffrin EL, Eisenhofer G, Porter F, Brito JP, Bornstein SR, Stratakis CA, González-González JG, Rodríguez-Gutiérrez R, Hannah-Shmouni F. Prevalence of Diabetes and Hypertension and their Associated Risks for Poor Outcomes in Covid-19 Patients. *Journal of the Endocrine Society*, bvaa102, <https://doi.org/10.1210/endo/bvaa102> (Among the top 10 percent of articles published in the journal in 2019-2020 and in 2020-2021 as assessed by rate of citation)
8. **Shekhar S**, McGlotten R, Auh S, Rother KI, Nieman LK. *Hypothalamic Pituitary Thyroid Axis in Cushing Syndrome. The Journal of Clinical Endocrinology & Metabolism*, dgaa858. (JCEM impact factor 6.1)
Available from <https://doi.org/10.1210/clinem/dgaa858>
9. Wurth R, Hajdenberg M, Barrera FJ, **Shekhar S**, Copacino C, Moreno-Pena PJ, Gharib OA, Porter F, Hiremath S, Hall JE, Schiffrin E, Eisenhofer G, Bornstein SR, Brito JP, González-González JG, Stratakis CA, Rodríguez-Gutiérrez R, Hannah-Shmouni F. A Scoping Review of Covid-19 Related Systematic Reviews and Meta-analyses: Can We Really Have Confidence in Their Results? *Postgraduate Medical Journal*. Published Online First: 26 February 2021. doi: 10.1136/postgradmedj-2020-139392 (Impact factor 2.08)
10. **Shekhar S**, Irizarry-Caro JA, Sinaii N, Gahl WA, Estrada-Veras JI, Dave RH, Gochuico BR, Papadakis GZ, Patronas N, Stratakis CA, O'Brien K, Hannah-Shmouni F. Pituitary Imaging Abnormalities and Related Endocrine Disorders in Erdheim–Chester Disease. *Cancers*. 2021; 13(16):4126. <https://doi.org/10.3390/cancers13164126> (5yr-Impact Factor 6.99)

Other peer-reviewed scholarship N/A

Scholarship without named authorship N/A

Non-peer reviewed scientific or medical publications/materials in print or other media:

News Media Coverage of Research (first author)

1. Medscape
<https://www.medscape.com/viewarticle/934685#:~:text=Further%20refinement%20of%20data%20from,17%25%20prevalence%20rate%20for%20hypertension.>
2. MDedge
<https://www.mdedge.com/cardiology/article/226081/diabetes/cleaner-data-confirm-severe-covid-19-link-diabetes-hypertension>
3. Endocrine Today (Healio)
<https://www.healio.com/news/endocrinology/20200730/prevalence-of-diabetes-hypertension-among-covid19-patients-likely-lower-than-reported>
4. Endocrine Today (Healio)

- <https://www.healio.com/news/endocrinology/20201117/higher-prevalence-of-hypothyroidism-found-in-patients-with-erdheimchester-disease>
5. Endocrine Today (Healio)
<https://www.healio.com/news/endocrinology/20210208/thyroid-dysfunction-highly-prevalent-in-cushings-syndrome>
 6. Women's Health (Healio)
<https://www.healio.com/news/womens-health-ob-gyn/20230504/ai-machine-learning-may-aid-in-pcos-detection-reducing-undiagnosed-burden>

Proceedings of meetings or other non-peer reviewed scholarship N/A

Reviews, chapters, monographs and editorials

1. **Shekhar S**, Goel A. Euthanasia: India's position in the Global scenario. Am J Hosp Palliat Care. 2013 Nov;30(7):628-31. (Impact factor (IF): 1.66)
2. Kumar A, **Shekhar S**, Dhole B. Thyroid and male reproduction. Indian J Endocrinol Metab. 2014;18(1):23–31. doi:10.4103/2230-8210.126523
3. **Shekhar S**, Hall JE, Klubo-Gwiedzinska J. The Hypothalamic Pituitary Thyroid Axis and Sleep. Curr Opin Endocr Metab Res. 2020. (online ahead of print)
<https://doi.org/10.1016/j.coemr.2020.10.002>
4. **Shekhar S**, Copacino CE, Barrera FJ, Hall JE, Hannah-Shmouni F. Insights into the Immunopathophysiology of Severe COVID-19 in Metabolic Disorders. Ann Natl Acad Med Sci. 2020 Apr;56(2):112-115. doi: 10.1055/s-0040-1713346.
5. **Shekhar S**, Martini A, De Cherney A. Genetic, Lifestyle and Environmental Factors in Male Infertility. In: Indian Society for Assisted Reproduction. March 2019. Publisher: IASR. Mumbai, IN
6. **Shekhar S**, Dhole B, Kumar A (2017) Thyroid. In: Kumar A., Sharma M. (eds) Basics of Human Andrology. Publisher: Springer, Singapore. https://doi.org/10.1007/978-981-10-3695-8_22

Books/textbooks for the medical or scientific community N/A

Case reports

1. **Shekhar S**, Singh S, Gupta S. Postcolonoscopy pancreatitis. Endoscopy 2014; 46: E515–E516 (Endoscopy impact factor 7.34)
2. **Shekhar S**, Rushabh Vakharia, and Anne Marie Van Hoven (2018) Retroperitoneal Ganglioneuroma Presenting As Symptomatic Nephrolithiasis In A Young Adult: A Zebra Among Horses. AACE Clinical Case Reports: March/April 2018, Vol. 4, No. 2, pp. e140-e142.
<https://doi.org/10.4158/EP171936.CR> (Impact factor (IF): 3.86)
3. **Shekhar S**, Dharmashaktu P. On the palm of his hands: ACTH induced hyperpigmentation. Am J Med. 2018 Feb;131(2):144-145. Epub 2017 Nov 7. (AJM Impact factor (IF): 4.76)
4. **Shekhar S**, Gubbi S, Papadakis GZ, Nilubol N, Hannah-Shmouni F. Adrenocortical carcinoma and pulmonary embolism from tumoral extension [published online ahead of print, 2019 Nov 25]. Endocrinol Diabetes Metab Case Rep. 2019;2019:19-0095. doi:10.1530/EDM-19-0095
5. **Shekhar S**, Chen J, Desai K. *Doegge-Potter syndrome presenting as 'end-stage renal disease-associated hypoglycaemia': a primary presentation of retroperitoneal sarcoma*. BMJ Case Reports CP 2020;13:e235549. 10.1136/bcr-2020-235549 (BMJ impact factor 30.22)
6. **Shekhar S**, Haykal R, Kamilaris C, Stratakis CA, Hannah-Shmouni F. *Curative resection of an aldosteronoma causing primary aldosteronism in the second trimester of pregnancy* [published

online ahead of print, 2020 Aug 4]. *Endocrinol Diabetes Metab Case Rep.* 2020;2020:20-0043. doi:10.1530/EDM-20-0043

Letters to the Editor

1. **Shekhar S**, Hannah-Shmouni F. Hookah smoking and COVID-19: Call for Action. [Letter to the editor] *CMAJ.* April 6, 2020 DOI: <https://doi.org/10.1503/cmaj.1095855>. Available from: <https://www.cmaj.ca/content/hookah-smoking-and-covid-19-call-action> (CMAJ impact factor 16.9)

Professional educational materials or reports, in print or other media:

Clinical Guidelines and Reports:

1. O'Brien K, Dave R, **Shekhar S**, Hannah-Shmouni F, Comis LE, Solomon BI, Chen M, Gahl WA, FitzGibbon E, Gochuico BR, Estrada-Veras JI. Survivorship Issues in Adult Patients With Histiocytic Neoplasms. *J Natl Compr Canc Netw.* 2021 Nov;19(11):1312-1318. doi: 10.6004/jnccn.2021.7096. PMID: 34781266.

Thesis: Longitudinal Evaluation of Reproductive Endocrine Function in Men with Cushing Syndrome (submitted April 3, 2023). Masters in Health Sciences. Duke University.

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings:

1. Skand Shekhar, MD, Francisco J. Barrera, MD, SM, Ethan Brown, BS, Amanda Rojo, MD, Javier Obeso, MD, Hiram Plata, MD3, Eddy P. Lincango Naranjo, MD, Nancy Terry, MLS, René Rodríguez-Gutiérrez, MD, MSc, PhD, Janet E. Hall, MD, MS. Artificial Intelligence and Machine Learning in the Detection of Polycystic Ovarian Syndrome: A Systematic Review and Meta-Analysis. American Association of Clinical Endocrinology Conference. Seattle, WA. May 4, 2023.
2. **Skand Shekhar**, MD, Joselyne Tessa Tonleu, BS, Chinelo C Okigbo, MD, PhD, Helen Leka, BS, Anne E Kim, MD, Bona Purse, MSW, Daniel Zaccaro, MS, Steven J Soldin, PhD, Katie R Hirsch, PhD, Abbie E Smith-Ryan, PhD, Janet E Hall, MD, MS, RF10 | PMON215 Greater changes in metabolic hormones are associated with a smaller decrease in pulsatile LH secretion in response to short term moderate energy restriction in healthy, young women, *Journal of the Endocrine Society*, Volume 6, Issue Supplement_1, November-December 2022, Pages A710–A711, <https://doi.org/10.1210/jendso/bvac150.1464>

(Rapid Fire Oral and Poster presentation)

3. Ethan Brown, **Skand Shekhar**, Angela Delaney, Adam B Burkholder, Lacey Plummer, Veronica Mericq, Paulina M Merino, Richard Quinton, Katie L Lewis, Natalie D Shaw, Corrine K Welt, Kathryn A Martin, Stephanie B Seminara, Leslie G Biesecker, Alison Motsinger-Reif, John S House, Janet Hall, LBMON114 Enrichment Of Rare Sequence Variants In Genes That Communicate Metabolic Signals To The GnRH System In Hypothalamic Amenorrhea, *Journal of the Endocrine Society*, Volume 6, Issue Supplement_1, November-December 2022, Pages A466–A467, <https://doi.org/10.1210/jendso/bvac150.970>
4. Georgios Papadakis, **Skand Shekhar**, Jorge Irizarry-Caro, Georgios Giannakakis, Apostolos Karantanas, William Gahl, Kevin O'Brien, Juvianee Estrada-Veras and Fady Hannah-Shmouni.

Increased metabolic activity of the adrenal glands assessed by 18F-FDG PET/CT in patients with Erdheim-Chester disease associated with the *BRAF V600E* disease causing variant. *Journal of Nuclear Medicine* May 2021, 62 (supplement 1) 1112

5. Georgios Z Papadakis, Jorge Irizarry-Caro, **Skand Shekhar**, Rachel Wurth, Amit Tirosh, Sara Haroutunian, Bernadette Gochuico, William Gahl, Juvianee Estrada-Veras, Kevin O'Brien, Fady Hannah-Shmouni. Testosterone replacement therapy (TRT) is associated with significant decline in testicular 18F-FDG activity in hypogonadal male patients with Erdheim-Chester Disease (ECD). *Journal of Nuclear Medicine* June 2022, 63 (supplement 2) 3132;
6. Abstract #998651: Follicular Thyroid Lymphoma: A Rare Differential of Neck Mass
Grover, Ashna **Shekhar**, **Skand** Rivadeneira, Ana Pandit, Zuha Gao, Chuanyun et al.
Endocrine Practice , Volume 27, Issue 6, S148 - S149
7. Abstract #1004271: The Effect of Short-term Energy Restriction on Appetite. Okigbo, Chinelo C. Tessa Tonleu, Joselyne **Shekhar**, **Skand** Leka, Helen F.Kim, Anne E.Purse, Bona P.Hirsch, Katie R.Smith-Ryan, Abbie E.Hall, Janet E. Hall. *Endocrine Practice* , Volume 27, Issue 6, S82 - S83
5. **Shekhar S**, Iris H, Meader B, Hall JE, Delaney A. SUN-438 Spontaneous Recovery of the Hypothalamic-Pituitary-Gonadal (HPG) Axis in a Female with Kallmann Syndrome, *Journal of the Endocrine Society*, Volume 3, Issue Supplement_1, April-May 2019, SUN-438, <https://doi.org/10.1210/js.2019-SUN-438>
6. **Shekhar S**, Gubbi S, McGlotten R, Nieman LK. SAT-459 Hypothalamic-Pituitary-Gonadal (HPG) and Hypothalamic-Pituitary-Thyroid (HPT) Axes in Cushing Syndrome (CS): A Retrospective Cohort Study, *Journal of the Endocrine Society*, Volume 3, Issue Supplement_1, April-May 2019, SAT-459, <https://doi.org/10.1210/js.2019-SAT-459>
7. Sirna S, **Shekhar S**, Sharma M. SUN-377 Adrenal Incidentaloma Evaluation in Critical Illness: A Diagnostic Dilemma, *Journal of the Endocrine Society*, Volume 3, Issue Supplement_1, April-May 2019, SUN-377, <https://doi.org/10.1210/js.2019-SUN-377>
8. Baral N, Basyal B, **Shekhar S**, Phillips A, Sharma M, Tumor Induced Osteomalacia: A Challenging Diagnosis. *Endocrine Practice*. 2019;25(78-79). Retrieved from <https://search.proquest.com/docview/2266301808?accountid=87927> (EP impact factor 3.81)
13. JT Tonleu, **S Shekhar**, C Okigbo, H Leka, A Kim, B Purse, K Hirsch, B Wei, B Stolze, J McGrath, AE Smith-Ryan, SJ Soldin, JE Hall. The Effects of Energy Restriction on Thyroid Hormone Dynamics. *Journal of the Endocrine Society* 5 (Supplement_1), A978-A979
14. **Shekhar S** & Gupta R. Proceedings of 2nd International Congress on Gerontology and Geriatric Medicine, New Delhi: 2012
10. **Shekhar S**, Dhole B. Effect of hyperestrogenism on gonadotropin levels in hyperthyroid males: An argument for positive feedback action of estrogen. Medical Students' International Conference (MEDSICON). August 2012. VMMC, New Delhi

F. Report of Technological and Other Scientific Innovations

G. Narrative Report

I am an endocrinologist, assistant research physician and a clinical investigator in the Reproductive Physiology and Pathophysiology Group, Hall lab within the NIEHS, NIH with a special interest in studying the relationship between metabolism and reproductive disorders. I attended medical school at the University of Delhi, India, followed by residency training in internal medicine and chief medical residency at Saint Peter's University Hospital/Rutgers Robert Wood Johnson Medical School, NJ. Thereafter, I completed my clinical and research training in adult endocrinology at the inter-institute endocrinology training program (IETP) at NIH, focusing on reproductive endocrinology, under Dr Janet Hall's mentorship.

During my short career, I have authored several original articles in high quality journals that have been widely cited. Some of these studies have been the subject of news articles due to their prominent impact on COVID-19 and other endocrinopathies. I have developed special expertise in the area of reproductive endocrine disorders and am working on several studies and manuscripts elaborating the role of environment, genetics, and metabolism on reproductive endocrine function. Additionally, I am an Associate Investigator on five NIH intramural protocols, including *the Role of Gonadotropin Pulsations in the Regulation of Puberty and Fertility* (12-E-0050), *the Molecular Basis of Inherited Reproductive Disorders* (12-E-0049), *Carefree Study (Calorie Restriction, Environment, and Fitness: Reproductive Effects Evaluation)* (16-E-0157). I investigate and treat a range of conditions such as idiopathic hypogonadotropic hypogonadism (IHH), Kallmann syndrome, puberty disorders, menstrual disorders, and polycystic ovarian syndrome (PCOS). Soon I will be launching a protocol that investigates the interaction between the environment and reproductive function. I also serve as an ad-hoc reviewer for over a dozen internationally reputed scientific journals such as *British Medical Journal Case Reports*, *Cancers* and the *Journal of Clinical Endocrinology & Metabolism*.

I am also an enthusiastic clinician and educator with a core role in the NIH's [Inter-institute Endocrinology Training Program](#) contributing to training the next generation of clinician scientists. I am double board certified in internal medicine, and endocrinology, diabetes and metabolism and hold active memberships of the Endocrine Society, American College of Physicians and American Association of Clinical Endocrinologists. Moreover, I am recognized to be among three endocrinologists across the world with expertise in the rare histiocytic malignancy, Erdheim-Chester disease (ECD). To that end, I have also co-authored the first ever survivorship guidelines on histiocytoses. My original work in the impact of Cushing's syndrome on the thyroid axis was included in the latest Cushing syndrome management guidelines published in 2021. I have also delivered several invited scientific talks and Medical Grand Round lectures nationally and internationally.

I have received several awards from the Endocrine Society, Rutgers University, Society for Bedside Medicine, and the Indian Council of Medical Research for a range of scientific and clinical contributions within endocrinology and internal medicine. My long-term goals are to excel as a clinical scientist by contributing new and meaningful insights into the reproductive and endocrine systems and have completed an additional master's in health sciences (clinical research) from Duke University to accomplish these goals.