



## Electron Kebebew, MD, FACS

Harry A. Oberhelman, Jr. and Mark L. Welton Professor

Surgery - General Surgery

### CLINICAL OFFICES

- **Stanford Cancer Center**

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### ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

Rebecca Gaw

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### Bio

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#### BIO

Dr. Kebebew is an internationally recognized expert in Endocrine Oncology and Surgery. He has performed more than three thousand operations on the adrenal, parathyroid and thyroid glands, and for neuroendocrine tumors of the gastrointestinal tract and pancreas.

Dr. Kebebew has published over 400 articles, chapters and textbooks, and serves on the editorial board and as a reviewer for 54 biomedical journals. He has received awards from the American Cancer Society, American Association for Cancer Research, American Thyroid Association, American Association of Endocrine Surgeons, and International Association of Endocrine Surgeons.

#### CLINICAL FOCUS

- Thyroid Cancer/Nodules
- Hyperthyroidism
- Goiter
- Thyroid Surgery
- Hyperparathyroidism
- Parathyroid Surgery
- Endocrine Surgery
- Endocrine Tumors
- Neuroendocrine tumors of the gastrointestinal tract and pancreas
- Adrenalectomy/Adrenal Surgery
- Adrenal Tumors
- Primary hyperaldosteronism
- Adrenal Cushing's syndrome
- Pheochromocytoma/Paraganglioma
- General Surgery

#### ACADEMIC APPOINTMENTS

- Professor, Surgery - General Surgery
- Member, Bio-X
- Member, Stanford Cancer Institute

#### PROFESSIONAL EDUCATION

- Board Certification: General Surgery, American Board of Surgery (2003)

- Residency: UCSF General Surgery Residency (2002) CA
- Postdoctoral training, NCI T32 fellowship , Cancer Biology (1998)
- Medical Education: University of California at San Francisco School of Medicine (1995) CA

## LINKS

- Endocrine Oncology: <http://med.stanford.edu/endocrine-oncology.html>
- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Kebebew's translational and clinical investigations have three main scientific goals: 1) to develop effective therapies for fatal, rare and neglected endocrine cancers, 2) to identify new methods, strategies and technologies for improving the diagnosis and treatment of endocrine neoplasms and the prognostication of endocrine cancers, and 3) to develop methods for precision treatment of endocrine tumors.

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Chandrayee Ghosh, Monica Tyagi

## Publications

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### PUBLICATIONS

- **Distinct DNA methylation signatures in neuroendocrine tumors specific for primary site and inherited predisposition.** *The Journal of clinical endocrinology and metabolism*  
Tirosh, A., Killian, J. K., Petersen, D., Zhu, Y. J., Walker, R. L., Blau, J. E., Nilubol, N., Patel, D., Agarwal, S. K., Weinstein, L. S., Meltzer, P., Kebebew, E.  
2020
- **Undertreatment of primary hyperparathyroidism in a privately insured US population: Decreasing utilization of parathyroidectomy despite expanding surgical guidelines.** *Surgery*  
Seib, C. D., Meng, T., Suh, I., Cisco, R. M., Lin, D. T., Morris, A. M., Trickey, A. W., Kebebew, E.  
2020
- **Epidural anesthesia and hypotension in pheochromocytoma and paraganglioma.** *Endocrine-related cancer*  
Wiseman, D., McDonald, J. D., Patel, D., Kebebew, E., Pacak, K., Nilubol, N.  
2020
- **Genetic and epigenetic alterations in pancreatic neuroendocrine tumors** *JOURNAL OF GASTROINTESTINAL ONCOLOGY*  
Tirosh, A., Kebebew, E.  
2020; 11 (3): 567–77
- **Genetic testing in endocrine surgery: Opportunities for precision surgery.** *Surgery*  
Alobuia, W., Annes, J., Kebebew, E.  
2020
- **Executive Summary of the American Association of Endocrine Surgeons Guidelines for the Definitive Surgical Management of Thyroid Disease in Adults.** *Annals of surgery*  
Patel, K. N., Yip, L., Lubitz, C. C., Grubbs, E. G., Miller, B. S., Shen, W., Angelos, P., Chen, H., Doherty, G. M., Fahey, T. J., Kebebew, E., Livolsi, V. A., Perrier, et al  
2020; 271 (3): 399–410
- **The American Association of Endocrine Surgeons Guidelines for the Definitive Surgical Management of Thyroid Disease in Adults.** *Annals of surgery*

- Patel, K. N., Yip, L., Lubitz, C. C., Grubbs, E. G., Miller, B. S., Shen, W., Angelos, P., Chen, H., Doherty, G. M., Fahey, T. J., Kebebew, E., Livolsi, V. A., Perrier, et al  
2020; 271 (3): e21–e93
- **Pan-cancer analysis of whole genomes** *NATURE*  
Campbell, P. J., Getz, G., Korbil, J. O., Stuart, J. M., Jennings, J. L., Stein, L. D., Perry, M. D., Nahal-Bose, H. K., Ouellette, B., Li, C. H., Rheinbay, E., Nielsen, G., Sgroi, et al  
2020; 578 (7793): 82–+
  - **A combinatorial strategy for targeting BRAF V600E mutant cancers with BRAF V600E inhibitor (PLX4720) and tyrosine kinase inhibitor (ponatinib).** *Clinical cancer research : an official journal of the American Association for Cancer Research*  
Kebebew, E., Ghosh, C., Kumar, S., Kushchayeva, Y., Gaskins, K., Boufraqech, M., Wei, D., Gara, S. K., Zhang, L., Zhang, Y., Shen, M., Mukherjee, S.  
2020
  - **A phase 1 study of nevanimibe HCl, a novel adrenal-specific sterol O-acyltransferase 1 (SOAT1) inhibitor, in adrenocortical carcinoma.** *Investigational new drugs*  
Smith, D. C., Kroiss, M., Kebebew, E., Habra, M. A., Chugh, R., Schneider, B. J., Fassnacht, M., Jafarinasabian, P., Ijzerman, M. M., Lin, V. H., Mohideen, P., Naing, A.  
2020
  - **Surgery for adrenocortical carcinoma: When and how?** *Best practice & research. Clinical endocrinology & metabolism*  
Sinclair, T. J., Gillis, A., Alobuia, W. M., Wild, H., Kebebew, E.  
2020: 101408
  - **Contemporary Management of Anaplastic Thyroid Cancer.** *Current treatment options in oncology*  
Alobuia, W., Gillis, A., Kebebew, E.  
2020; 21 (10): 78
  - **Editorial: Translational Research in Thyroid Cancer.** *Frontiers in endocrinology*  
Vasko, V., Kebebew, E., Cheng, S. Y., Jensen, K. E.  
2020; 11: 224
  - **An update on familial nonmedullary thyroid cancer.** *Endocrine*  
Ammar, S. A., Alobuia, W. M., Kebebew, E.  
2020
  - **Adrenal Vein Sampling to Distinguish Between Unilateral and Bilateral Primary Hyperaldosteronism: To ACTH Stimulate or Not?** *Journal of clinical medicine*  
Sung, T. Y., Alobuia, W. M., Tyagi, M. V., Ghosh, C., Kebebew, E.  
2020; 9 (5)
  - **GATA3 and APOBEC3B are prognostic markers in adrenocortical carcinoma and APOBEC3B is directly transcriptionally regulated by GATA3.** *Oncotarget*  
Gara, S. K., Tyagi, M. V., Patel, D. T., Gaskins, K., Lack, J., Liu, Y., Kebebew, E.  
2020; 11 (36): 3354–70
  - **Racial disparities in knowledge, attitudes and practices related to COVID-19 in the USA.** *Journal of public health (Oxford, England)*  
Alobuia, W. M., Dalva-Baird, N. P., Forrester, J. D., Bendavid, E., Bhattacharya, J., Kebebew, E.  
2020
  - **30th Anniversary and The Future of Thyroid.** *Thyroid : official journal of the American Thyroid Association*  
Kebebew, E.  
2019
  - **NOP53 as A Candidate Modifier Locus for Familial Non-Medullary Thyroid Cancer.** *Genes*  
Orois, A., Gara, S. K., Mora, M., Halperin, I., Martinez, S., Alfayate, R., Kebebew, E., Oriola, J.  
2019; 10 (11)
  - **Resection of the Primary Tumor in Patients with Distant Thyroid Cancer Metastasis Is Associated with Longer Survival**  
Sedaghati, M., Lin, D. T., Cisco, R. M., Kebebew, E.  
ELSEVIER SCIENCE INC.2019: S82

- **Pediatric vs Adult Adrenocortical Carcinoma: Different Rate of Surgical Treatment and Patient Outcome**  
Sedaghati, M., Lin, D. T., Cisco, R. M., Kebebew, E.  
ELSEVIER SCIENCE INC.2019: S81–S82
- **Limited Utility of Circulating Cell-Free DNA Integrity as a Diagnostic Tool for Differentiating Between Malignant and Benign Thyroid Nodules With Indeterminate Cytology (Bethesda Category III)** *FRONTIERS IN ONCOLOGY*  
Thakur, S., Tobey, A., Daley, B., Auh, S., Walter, M., Patel, D., Nilubol, N., Kebebew, E., Patel, A., Jensen, K., Vasko, V., Klubo-Gwiezdzinska, J.  
2019; 9
- **Surgical Resection of Pheochromocytomas and Paragangliomas is Associated with Lower Cholesterol Levels.** *World journal of surgery*  
Good, M. L., Malekzadeh, P., Ruff, S. M., Gupta, S., Copeland, A., Pacak, K., Nilubol, N., Kebebew, E., Patel, D.  
2019
- **The Immune Landscape of Cancer.** *Immunity*  
Thorsson, V., Gibbs, D. L., Brown, S. D., Wolf, D., Bortone, D. S., Ou Yang, T., Porta-Pardo, E., Gao, G. F., Plaisier, C. L., Eddy, J. A., Ziv, E., Culhane, A. C., Paull, et al  
2019; 51 (2): 411–12
- **Long noncoding RNAs in thyroid cancer.** *Current opinion in endocrinology, diabetes, and obesity*  
Sedaghati, M., Kebebew, E.  
2019
- **National Treatment Practice for Adrenocortical Carcinoma: Have they changed and have we made any progress?** *The Journal of clinical endocrinology and metabolism*  
Tierney, J. F., Chivukula, S. V., Poirier, J., Pappas, S. G., Schadde, E., Hertl, M., Kebebew, E., Keutgen, X.  
2019
- **Solutions to Reduce Unnecessary Imaging-Reply.** *JAMA*  
Oren, O., Kebebew, E., Ioannidis, J. P.  
2019; 321 (22): 2243
- **ONCOGENE PANEL SEQUENCING ANALYSIS IDENTIFIES CANDIDATE ACTIONABLE GENES IN ADVANCED WELL-DIFFERENTIATED GASTROENTEROPANCREATIC NEUROENDOCRINE TUMORS** *ENDOCRINE PRACTICE*  
Tirosh, A., Killian, J., Zhu, Y., Petersen, D., Walling, J., Mor-Cohen, R., Neychev, V., Stevenson, H., Keutgen, X. M., Patel, D., Nilubol, N., Meltzer, P., Kebebew, et al  
2019; 25 (6): 580–88
- **Reply: Do patients with familial nonmedullary thyroid cancer present with more aggressive disease? Implications for initial surgical treatment** *SURGERY*  
el Lakis, M., Kebebew, E.  
2019; 165 (6): 1246–47
- **Distinct genome-wide methylation patterns in sporadic and hereditary nonfunctioning pancreatic neuroendocrine tumors** *CANCER*  
Tirosh, A., Mukherjee, S., Lack, J., Gara, S., Wang, S., Quezado, M. M., Keutgen, X. M., Wu, X., Cam, M., Kumar, S., Patel, D., Nilubol, N., Tyagi, et al  
2019; 125 (8): 1247–57
- **Reply: Do patients with familial nonmedullary thyroid cancer present with more aggressive disease? Implications for initial surgical treatment.** *Surgery*  
Lakis, M. E., Kebebew, E.  
2019
- **ONCOGENE PANEL SEQUENCING ANALYSIS IDENTIFIES CANDIDATE ACTIONABLE GENES IN ADVANCED WELL-DIFFERENTIATED GASTROENTEROPANCREATIC NEUROENDOCRINE TUMORS.** *Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists*  
Tirosh, A., Killian, J. K., Zhu, Y. J., Petersen, D., Walling, J., Mor-Cohen, R., Neychev, V., Stevenson, H., Keutgen, X. M., Patel, D., Nilubol, N., Meltzer, P., Kebebew, et al  
2019
- **Association of Thyrotropin Suppression With Survival Outcomes in Patients With Intermediate- and High-Risk Differentiated Thyroid Cancer.** *JAMA network open*  
Klubo-Gwiezdzinska, J., Auh, S., Gershengorn, M., Daley, B., Bikas, A., Burman, K., Wartofsky, L., Urken, M., Dewey, E., Smallridge, R., Chindris, A., Kebebew, E.  
2019; 2 (2): e187754

- **Association of Thyrotropin Suppression With Survival Outcomes in Patients With Intermediate- and High-Risk Differentiated Thyroid Cancer** *JAMA NETWORK OPEN*  
Klubo-Gwiedzinska, J., Auh, S., Gershengorn, M., Daley, B., Bikas, A., Burman, K., Wartofsky, L., Urken, M., Dewey, E., Smallridge, R., Chindris, A., Kebebew, E.  
2019; 2 (2)
- **Risk Haplotypes Uniquely Associated with Radioiodine Refractory Thyroid Cancer Patients of High African Ancestry.** *Thyroid : official journal of the American Thyroid Association*  
Hurst, Z., Liyanarachchi, S., He, H., Brock, P., Sipos, J. A., Nabhan, F., Kebebew, E., Green, P., Cote, G. J., Sherman, S. I., Walker, C. J., Chang, Y. S., Xue, et al  
2019
- **Distinct genome-wide methylation patterns in sporadic and hereditary nonfunctioning pancreatic neuroendocrine tumors.** *Cancer*  
Tirosh, A., Mukherjee, S., Lack, J., Gara, S. K., Wang, S., Quezado, M. M., Keutgen, X. M., Wu, X., Cam, M., Kumar, S., Patel, D., Nilubol, N., Tyagi, et al  
2019
- **Curbing Unnecessary and Wasted Diagnostic Imaging.** *JAMA*  
Oren, O., Kebebew, E., Ioannidis, J. P.  
2019
- **MicroRNA-210 May Be a Preoperative Biomarker of Malignant Pheochromocytomas and Paragangliomas.** *The Journal of surgical research*  
Ruff, S. M., Ayabe, R. I., Malekzadeh, P., Good, M. L., Wach, M. M., Gonzales, M. K., Tirosh, A., Nilubol, N., Pacak, K., Kebebew, E., Patel, D.  
2019; 243: 1–7
- **Adrenocortical tumors have a distinct, long, non-coding RNA expression profile and LINC00271 is downregulated in malignancy.** *Surgery*  
Buishand, F. O., Liu-Chittenden, Y., Fan, Y., Tirosh, A., Gara, S. K., Patel, D., Meerzaman, D., Kebebew, E.  
2019
- **Preoperative systemic inflammatory markers are prognostic indicators in recurrent adrenocortical carcinoma.** *Journal of surgical oncology*  
Gaitanidis, A., Wiseman, D., El Lakis, M., Nilubol, N., Kebebew, E., Patel, D.  
2019
- **Lysyl Oxidase is a key player in BRAF/MAPK pathway-driven thyroid cancer aggressiveness.** *Thyroid : official journal of the American Thyroid Association*  
Boufraqech, M., Patel, D., Nilubol, N., Powers, A. S., King, T., Shell, J., Lack, J., Zhang, L., Gara, S. K., Gunda, V., Klubo-Gwiedzinska, J., Kumar, S., Fagin, et al  
2018
- **ASO Author Reflections: Systemic Inflammatory Markers in Pancreatic Neuroendocrine Tumors.** *Annals of surgical oncology*  
Gaitanidis, A., Patel, D., Kebebew, E.  
2018
- **Do patients with familial nonmedullary thyroid cancer present with more aggressive disease? Implications for initial surgical treatment.** *Surgery*  
El Lakis, M., Giannakou, A., Nockel, P. J., Wiseman, D., Gara, S. K., Patel, D., Sater, Z. A., Kushchayeva, Y. Y., Klubo-Gwiedzinska, J., Nilubol, N., Merino, M. J., Kebebew, E.  
2018
- **Metastatic neuroendocrine tumors of the gastrointestinal tract and pancreas: A surgeon's plea to centering attention on the liver.** *Seminars in oncology*  
Keutgen, X. M., Schadde, E., Pommier, R. F., Halfdanarson, T. R., Howe, J. R., Kebebew, E.  
2018
- **Cumulative Radiation Exposures from CT Screening and Surveillance Strategies for von Hippel-Lindau-associated Solid Pancreatic Tumors.** *Radiology*  
Tirosh, A., Journy, N., Folio, L. R., Lee, C., Leite, C., Yao, J., Kovacs, W., Linehan, W. M., Malayeri, A., Kebebew, E., de Gonzalez, A. B.  
2018: 180687
- **Metastatic adrenocortical carcinoma displays higher mutation rate and tumor heterogeneity than primary tumors** *NATURE COMMUNICATIONS*  
Gara, S., Lack, J., Zhang, L., Harris, E., Cam, M., Kebebew, E.  
2018; 9: 4172
- **Radioguided Surgery With Gallium 68 Dotatate for Patients With Neuroendocrine Tumors.** *JAMA surgery*  
El Lakis, M., Gianakou, A., Nockel, P., Wiseman, D., Tirosh, A., Quezado, M. A., Patel, D., Nilubol, N., Pacak, K., Sadowski, S. M., Kebebew, E.  
2018

- **Aggressive resection of neuroendocrine tumor (NET) liver metastases: NET neutral or gain?** *Surgery*  
Cisco, R., Lin, D., Kebebew, E.  
2018
- **Incidence and management of postoperative hyperglycemia in patients undergoing insulinoma resection** *ENDOCRINE*  
Nockel, P., Tirosh, A., El Lakis, M., Gaitanidis, A., Merkel, R., Patel, D., Nilubol, N., Sadowski, S. M., Cochran, C., Gorden, P., Kebebew, E.  
2018; 61 (3): 422–27
- **Predictors of Survival in Adrenocortical Carcinoma: An Analysis From the National Cancer Database** *JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM*  
Tella, S., Kommalapati, A., Yaturu, S., Kebebew, E.  
2018; 103 (9): 3566–73
- **Neural monitoring in endocrine neck surgery** *GLAND SURGERY*  
El Lakis, M., Kebebew, E.  
2018; 7: S86–S88
- **Identification of Differential Transcriptional Patterns in Primary and Secondary Hyperparathyroidism** *JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM*  
Sadowski, S., Pusztaszeri, M., Brulhart-Meynet, M., Petrenko, V., De Vito, C., Sobel, J., Delucinge-Vivier, C., Kebebew, E., Regazzi, R., Philippe, J., Triponez, F., Dibner, C.  
2018; 103 (6): 2189–98
- **The Immune Landscape of Cancer** *IMMUNITY*  
Thorsson, V., Gibbs, D. L., Brown, S. D., Wolf, D., Bortone, D. S., Yang, T., Porta-Pardo, E., Gao, G. F., Plaisier, C. L., Eddy, J. A., Ziv, E., Culhane, A. C., Paull, et al  
2018; 48 (4): 812–+
- **Comparative Molecular Analysis of Gastrointestinal Adenocarcinomas** *CANCER CELL*  
Liu, Y., Sethi, N. S., Hinoue, T., Schneider, B. G., Cherniack, A. D., Sanchez-Vega, F., Seoane, J. A., Farshidfar, F., Bowlby, R., Islam, M., Kim, J., Chatila, W., Akbani, et al  
2018; 33 (4): 721–+
- **Machine Learning Identifies Stemness Features Associated with Oncogenic Dedifferentiation** *CELL*  
Malta, T. M., Sokolov, A., Gentles, A. J., Burzykowski, T., Poisson, L., Weinstein, J. N., Kaminska, B., Huelsken, J., Omberg, L., Gevaert, O., Colaprico, A., Czerwinska, P., Mazurek, et al  
2018; 173 (2): 338–+
- **Genomic, Pathway Network, and Immunologic Features Distinguishing Squamous Carcinomas** *CELL REPORTS*  
Campbell, J. D., Yau, C., Bowlby, R., Liu, Y., Brennan, K., Fan, H., Taylor, A. M., Wang, C., Walter, V., Akbani, R., Byers, L., Creighton, C. J., Coarfa, et al  
2018; 23 (1): 194–+
- **Neural monitoring in endocrine neck surgery.** *Gland surgery*  
El Lakis, M., Kebebew, E.  
2018; 7 (Suppl 1): S86–S88
- **Four-Gland Exploration Versus Focused Parathyroidectomy for Hyperparathyroidism Jaw Tumor Syndrome** *DIFFICULT DECISIONS IN ENDOCRINE SURGERY: AN EVIDENCE-BASED APPROACH*  
Patel, D., Kebebew, E., Angelos, P., Grogan, R. H.  
2018: 227–37