Stanford

Seung K. Kim M.D., Ph.D.

KM Mulberry Professor, Professor of Developmental Biology, of Medicine (Endocrinology) and, by courtesy, of Pediatrics (Endocrinology)

CONTACT INFORMATION

- **Alternate Contact**

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Bio

ACADEMIC APPOINTMENTS

- Professor, Developmental Biology
- Professor, Medicine - Endocrinology, Gerontology, & Metabolism
- Professor (By courtesy), Pediatrics - Endocrinology
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Co-director, Center of Excellence, JDRF Northern California (Stanford), (2019- present)
- Director, Stanford Diabetes Research Center, (2016- present)
- Director, Stanford MSTP, (2008-2013)
- Associate Director, Stanford Medical Scientist Training Program, (2000-2008)

HONORS AND AWARDS

- JDRF Innovation Award, JDRF, Juvenile Diabetes Research Foundation (2020)
- Living and Giving Award, Juvenile Diabetes Research Foundation Northern California Chapter (2004)
- Faculty Scholar Award, SmithKline Beecham-Stanford University School of Medicine (1999-2001)
- Junior Faculty Scholar, Howard Hughes Medical Institute/Stanford University School of Medicine (1999-2001)
- Henry J. Kaiser Family Foundation Award for Excellence in Preclinical Teaching, Stanford University School of Medicine (2002)
- Faculty Scholar Award, Donald E. and Delia B. Baxter Foundation (1999-2001)
- Career Development Award, American Diabetes Association (1999-2003)

- Named Investigator Award, Stanford-NIH Digestive Diseases Center (2000)
- Pew Biomedical Research Scholar, The Pew Charitable Trusts (1999-2003)
- Investigator, Howard Hughes Medical Institute (2008-2016)
- Gerald and Kayla Grodsky Basic Science Research Award, Juvenile Diabetes Research Foundation (JDRF) (2013)
- Ho-Am Prize in Medicine, Ho-Am Foundation (2014)
- Faculty Award for Excellence in Mentoring and Service, Office of Graduate Education, Stanford University School of Medicine (2015)

PROFESSIONAL EDUCATION

- A.B., Harvard University , Biochemical Sciences (1985)
- M.D., Stanford University , Medicine (1992)
- Ph.D., Stanford University , Biochemistry (1992)

LINKS

- Kim Lab Website: http://seungkimlab.stanford.edu/
- Stanford Diabetes Research Center: https://sdrc.stanford.edu
- Stan-X and Discovery Now: https://www.stan-x.org/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Understanding organ development and achieving functional restoration of diseased organs is a broad goal motivating effort in our group. Pancreatic islets of Langerhans, endocrine organs that secrete insulin and glucagon, have emerged as a paradigm for investigating both organ development and restoration. Deficiency of insulin-producing islet β-cells or their function underlies the pathogenesis of diabetes mellitus, a disease with devastating autoimmune (type 1), pandemic (type 2), and exocrine-associated (type 3c) forms. However, islet replacement, or preservation in diabetes, is ultimately limited by our inadequate understanding of mechanisms controlling islet formation, growth and immunological protection. To discover these mechanisms, my laboratory is using a combination of genetic, developmental, immunological, physiological and genomic approaches in different experimental systems, with a focus on several fundamental questions:

What are the cellular, molecular, signaling and genetic mechanisms regulating pancreatic development and functional maturation?

Can we harness our growing understanding of pancreatic islet development to generate replacement islets for diabetes, including islet cells generated from human stem cell lines?

What are the genetic programs underlying diabetes risk?

What immunological and transplantation paradigms can be developed to protect native or replacement islets in type 1 diabetes?

Can we advance understanding of normal pancreas development and function to discover the basis of devastating exocrine pancreatic diseases, including pancreatic cancer?

To address these challenges, our group has developed new approaches in mice, fruit flies, pigs, primary human pancreatic cells, and multipotent human stem cells. Each of these systems offers different experimental advantages. Discoveries from our systems have created unprecedented opportunities for

harnessing knowledge about pancreatic development and growth to restore pancreas islet function, and to identify the molecular, genetic, signaling, and immune basis of pancreatic diseases like diabetes mellitus, pancreatitis and pancreatic cancer.

Teaching

COURSES

2025-26

- Elements of Grant Writing: DBIO 234 (Aut)

2024-25

- Elements of Grant Writing: DBIO 234 (Aut)

2023-24

- Elements of Grant Writing: DBIO 234 (Aut)

2022-23

- Elements of Grant Writing: DBIO 234 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Arjun Rajan

Postdoctoral Faculty Sponsor

Christina Gangemi, Faidat Ishola, Hsin Hsien Lin, Martin Neukam, Stephan Ramos, Yuqi Zhou

Doctoral Dissertation Advisor (AC)

Preksha Bhagchandani

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Cancer Biology (Phd Program)
- Dermatology (Fellowship Program)
- Developmental Biology (Phd Program)
- Endocrinology (Fellowship Program)
- Medicine (Masters Program)
- Neurosciences (Phd Program)
- Oncology (Fellowship Program)

Publications

PUBLICATIONS

- **Patch-Seq Links Single-Cell Transcriptomes to Human Islet Dysfunction in Diabetes.** *Cell metabolism*
  Camunas-Soler, J., Dai, X., Hang, Y., Bautista, A., Lyon, J., Suzuki, K., Kim, S. K., Quake, S. R., MacDonald, P. E.
  2020

- **An Interscholastic Network To Generate LexA Enhancer Trap Lines in Drosophila** *G3-GENES GENOMES GENETICS*
  Kockel, L., Griffin, C., Ahmed, Y., Fidelak, L., Rajan, A., Gould, E. P., Haigney, M., Ralston, B., Tercek, R. J., Galligani, L., Rao, S., Huq, L., Bhargava, et al
  2019; 9 (7): 2097–2106

- **Discovering human diabetes-risk gene function with genetics and physiological assays** *NATURE COMMUNICATIONS*

Peiris, H., Park, S., Louis, S., Gu, X., Lam, J. Y., Asplund, O., Ippolito, G. C., Bottino, R., Groop, L., Tucker, H., Kim, S. K.
2018; 9: 3855

- **Age-Dependent Pancreatic Gene Regulation Reveals Mechanisms Governing Human beta Cell Function** *CELL METABOLISM*
  Arda, H. E., Li, L., Tsai, J., Torre, E. A., Rosli, Y., Peiris, H., Spitale, R. C., Dai, C., Gu, X., Qu, K., Wang, P., Wang, J., Grompe, et al
  2016; 23 (5): 909-920
- **PDGF signalling controls age-dependent proliferation in pancreatic beta-cells** *NATURE*
  Chen, H., Gu, X., Liu, Y., Wang, J., Wirt, S. E., Bottino, R., Schorle, H., Sage, J., Kim, S. K.
  2011; 478 (7369): 349-?
- **Calcineurin/NFAT signalling regulates pancreatic beta-cell growth and function** *NATURE*
  Heit, J. J., Apelqvist, A. A., Gu, X., Winslow, M. M., Neilson, J. R., Crabtree, G. R., Kim, S. K.
  2006; 443 (7109): 345-349
- **In vivo studies of glucagon secretion by human islets transplanted in mice.** *Nature metabolism*
  Tellez, K., Hang, Y., Gu, X., Chang, C. A., Stein, R. W., Kim, S. K.
  2020; 2 (6): 547-557
- **Lactation improves pancreatic beta cell mass and function through serotonin production** *SCIENCE TRANSLATIONAL MEDICINE*
  Moon, J., Kim, H., Kim, H., Park, J., Choi, W., Choi, W., Hong, H., Ro, H., Jun, S., Choi, S., Banerjee, R. R., Shong, M., Cho, et al
  2020; 12 (541)
- **Serotonin Regulates Adult beta-Cell Mass by Stimulating Perinatal beta-Cell Proliferation** *DIABETES*
  Moon, J., Kim, Y., Kim, K., Osonoi, S., Wang, S., Saunders, D. C., Wang, J., Yang, K., Kim, H., Lee, J., Jeong, J., Banerjee, R. R., Kim, et al
  2020; 69 (2): 205–14
- **Molecular and genetic regulation of pig pancreatic islet cell development.** *Development (Cambridge, England)*
  Kim, S. n., Whitener, R. L., Peiris, H. n., Gu, X. n., Chang, C. A., Lam, J. Y., Camunas-Soler, J. n., Park, I. n., Bevacqua, R. J., Tellez, K. n., Quake, S. R., Lakey, J. R., Bottino, et al
  2020
- **A Chromatin Basis for Cell Lineage and Disease Risk in the Human Pancreas.** *Cell systems*
  Arda, H. E., Tsai, J., Rosli, Y. R., Giresi, P., Bottino, R., Greenleaf, W. J., Chang, H. Y., Kim, S. K.
  2018
- **The Interface of Pancreatic Cancer With Diabetes, Obesity, and Inflammation: Research Gaps and Opportunities: Summary of a National Institute of Diabetes and Digestive and Kidney Diseases Workshop** *PANCREAS*
  Abbruzzese, J. L., Andersen, D. K., Borrebaeck, C. A. K., Chari, S. T., Costello, E., Cruz-Monserrate, Z., Eibl, G., Engleman, E. G., Fisher, W. E., Habtezion, A., Kim, S. K., Korc, M., Logsdon, et al
  2018; 47 (5): 516–25
- **Single-cell transcriptomics of 20 mouse organs creates a Tabula Muris.** *Nature*
  2018; 562 (7727): 367–72
- **Age-dependent human β cell proliferation induced by glucagon-like peptide 1 and calcineurin signaling.** *The Journal of clinical investigation*
  Dai, C., Hang, Y., Shostak, A., Poffenberger, G., Hart, N., Prasad, N., Phillips, N., Levy, S. E., Greiner, D. L., Shultz, L. D., Bottino, R., Kim, S. K., Powers, et al
  2017; 127 (10): 3835-3844
- **Reconstituting development of pancreatic intraepithelial neoplasia from primary human pancreas duct cells.** *Nature communications*
  Lee, J., Snyder, E. R., Liu, Y., Gu, X., Wang, J., Flowers, B. M., Kim, Y. J., Park, S., Szot, G. L., Hruban, R. H., Longacre, T. A., Kim, S. K.
  2017; 8: 14686-?
- **Converting Adult Pancreatic Islet a Cells into ß Cells by Targeting Both Dnmt1 and Arx.** *Cell metabolism*
  Chakravarthy, H., Gu, X., Enge, M., Dai, X., Wang, Y., Damond, N., Downie, C., Liu, K., Wang, J., Xing, Y., Chera, S., Thorel, F., Quake, et al
  2017
- **Pathways to clinical CLARITY: volumetric analysis of irregular, soft, and heterogeneous tissues in development and disease.** *Scientific reports*

Hsueh, B. n., Burns, V. M., Pauerstein, P. n., Holzem, K. n., Ye, L. n., Engberg, K. n., Wang, A. C., Gu, X. n., Chakravarthy, H. n., Arda, H. E., Charville, G. n., Vogel, H. n., Efimov, et al
2017; 7 (1): 5899

- **A p53 Super-tumor Suppressor Reveals a Tumor Suppressive p53-Ptpn14-Yap Axis in Pancreatic Cancer.** *Cancer cell*
  Mello, S. S., Valente, L. J., Raj, N. n., Seoane, J. A., Flowers, B. M., McClendon, J. n., Bieging-Rolett, K. T., Lee, J. n., Ivanochko, D. n., Kozak, M. M., Chang, D. T., Longacre, T. A., Koong, et al
  2017; 32 (4): 460–73.e6

- **T cells expressing chimeric antigen receptor promote immune tolerance.** *JCI insight*
  Pierini, A. n., Iliopoulou, B. P., Peiris, H. n., Pérez-Cruz, M. n., Baker, J. n., Hsu, K. n., Gu, X. n., Zheng, P. P., Erkers, T. n., Tang, S. W., Strober, W. n., Alvarez, M. n., Ring, et al
  2017; 2 (20)

- **A radial axis defined by semaphorin-to-neuropilin signaling controls pancreatic islet morphogenesis.** *Development (Cambridge, England)*
  Pauerstein, P. T., Tellez, K. n., Willmarth, K. B., Park, K. M., Hsueh, B. n., Efsun Arda, H. n., Gu, X. n., Aghajanian, H. n., Deisseroth, K. n., Epstein, J. A., Kim, S. K.
  2017; 144 (20): 3744–54

- **Single-Cell Analysis of Human Pancreas Reveals Transcriptional Signatures of Aging and Somatic Mutation Patterns.** *Cell*
  Enge, M. n., Arda, H. E., Mignardi, M. n., Beausang, J. n., Bottino, R. n., Kim, S. K., Quake, S. R.
  2017; 171 (2): 321–30.e14

- **A Drosophila LexA Enhancer-Trap Resource for Developmental Biology and Neuroendocrine Research.** *G3 (Bethesda, Md.)*
  Kockel, L., Huq, L. M., Ayyar, A., Herold, E., MacAlpine, E., Logan, M., Savvides, C., Kim, G. E., Chen, J., Clark, T., Duong, T., Fazel-Rezai, V., Havey, et al
  2016; 6 (10): 3017-3026

- **Gestational Diabetes Mellitus From Inactivation of Prolactin Receptor and MafB in Islet ß-Cells.** *Diabetes*
  Banerjee, R. R., Cyphert, H. A., Walker, E. M., Chakravarthy, H., Peiris, H., Gu, X., Liu, Y., Conrad, E., Goodrich, L., Stein, R. W., Kim, S. K.
  2016; 65 (8): 2331-2341

- **iPSCs: 10 Years and Counting.** *Cell*
  2016; 165 (5): 1041-2

- **Using Drosophila to discover mechanisms underlying type 2 diabetes** *DISEASE MODELS & MECHANISMS*
  Alfa, R. W., Kim, S. K.
  2016; 9 (4): 365-376

- **Research Resource: Genetic Labeling of Human Islet Alpha Cells.** *Molecular endocrinology*
  Pauerstein, P. T., Park, K. M., Peiris, H. S., Wang, J., Kim, S. K.
  2016; 30 (2): 248-253

- **Efficient generation of pancreatic β-like cells from the mouse gallbladder.** *Stem cell research*
  Wang, Y. n., Galivo, F. n., Pelz, C. n., Haft, A. n., Lee, J. n., Kim, S. K., Grompe, M. n.
  2016; 17 (3): 587–96

- **A cellular, molecular, and pharmacological basis for appendage regeneration in mice.** *Genes & development*
  Leung, T. H., Snyder, E. R., Liu, Y., Wang, J., Kim, S. K.
  2015; 29 (20): 2097-2107

- **Dissecting Human Gene Functions Regulating Islet Development With Targeted Gene Transduction** *DIABETES*
  Pauerstein, P. T., Sugiyama, T., Stanley, S. E., McLean, G. W., Wang, J., Martin, M. G., Kim, S. K.
  2015; 64 (8): 3037-3049

- **Pancreatic cancer modeling using retrograde viral vector delivery and in vivo CRISPR/Cas9-mediated somatic genome editing** *GENES & DEVELOPMENT*
  Chiou, S., Winters, I. P., Wang, J., Naranjo, S., Dudgeon, C., Tamburini, F. B., Brady, J. J., Yang, D., Gruener, B. M., Chuang, C., Caswell, D. R., Zeng, H., Chu, et al
  2015; 29 (14): 1576-1585

- **Suppression of insulin production and secretion by a decretin hormone.** *Cell metabolism*
  Alfa, R. W., Park, S., Skelly, K., Poffenberger, G., Jain, N., Gu, X., Kockel, L., Wang, J., Liu, Y., Powers, A. C., Kim, S. K.
  2015; 21 (2): 323-333

- **Novel GATA6 mutations in patients with pancreatic agenesis and congenital heart malformations.** *PloS one*
  Chao, C. S., McKnight, K. D., Cox, K. L., Chang, A. L., Kim, S. K., Feldman, B. J.
  2015; 10 (2)

- **Human COL7A1-corrected induced pluripotent stem cells for the treatment of recessive dystrophic epidermolysis bullosa.** *Science translational medicine*
  Sebastiano, V., Zhen, H. H., Haddad, B., Bashkirova, E., Melo, S. P., Wang, P., Leung, T. L., Siprashvili, Z., Tichy, A., Li, J., Ameen, M., Hawkins, J., Lee, et al
  2014; 6 (264): 264ra163-?

- **An integrated cell purification and genomics strategy reveals multiple regulators of pancreas development.** *PLoS genetics*
  Benitez, C. M., Qu, K., Sugiyama, T., Pauerstein, P. T., Liu, Y., Tsai, J., Gu, X., Ghodasara, A., Arda, H. E., Zhang, J., Dekker, J. D., Tucker, H. O., Chang, et al
  2014; 10 (10)

- **A genetic strategy to measure circulating Drosophila insulin reveals genes regulating insulin production and secretion.** *PLoS genetics*
  Park, S., Alfa, R. W., Topper, S. M., Kim, G. E., Kockel, L., Kim, S. K.
  2014; 10 (8)

- **Insight into insulin secretion from transcriptome and genetic analysis of insulin-producing cells of Drosophila.** *Genetics*
  Cao, J., Ni, J., Ma, W., Shiu, V., Milla, L. A., Park, S., Spletter, M. L., Tang, S., Zhang, J., Wei, X., Kim, S. K., Scott, M. P.
  2014; 197 (1): 175-192

- **Dicer Regulates Differentiation and Viability during Mouse Pancreatic Cancer Initiation** *PLOS ONE*
  Morris, J. P., Greer, R., Russ, H. A., von Figura, G., Kim, G. E., Busch, A., Lee, J., Hertel, K. J., Kim, S., McManus, M., Hebrok, M.
  2014; 9 (5)

- **Topical hypochlorite ameliorates NF-kappa B-mediated skin diseases in mice** *JOURNAL OF CLINICAL INVESTIGATION*
  Leung, T. H., Zhang, L. F., Wang, J., Ning, S., Knox, S. J., Kim, S. K.
  2013; 123 (12): 5361-5370

- **Expansion and conversion of human pancreatic ductal cells into insulin-secreting endocrine cells** *ELIFE*
  Lee, J., Sugiyama, T., Liu, Y., Wang, J., Gu, X., Lei, J., Markmann, J. F., Miyazaki, S., Miyazaki, J., Szot, G. L., Bottino, R., Kim, S. K.
  2013; 2

- **Combined modulation of polycomb and trithorax genes rejuvenates β cell replication.** *The Journal of clinical investigation*
  Zhou, J. X., Dhawan, S., Fu, H., Snyder, E., Bottino, R., Kundu, S., Kim, S. K., Bhushan, A.
  2013; 123 (11): 4849-58

- **Reconstituting pancreas development from purified progenitor cells reveals genes essential for islet differentiation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Sugiyama, T., Benitez, C. M., Ghodasara, A., Liu, L., McLean, G. W., Lee, J., Blauwkamp, T. A., Nusse, R., Wright, C. V., Gu, G., Kim, S. K.
  2013; 110 (31): 12691-12696

- **Gene regulatory networks governing pancreas development.** *Developmental cell*
  Arda, H. E., Benitez, C. M., Kim, S. K.
  2013; 25 (1): 5-13

- **A Molecular Signature for Purified Definitive Endoderm Guides Differentiation and Isolation of Endoderm from Mouse and Human Embryonic Stem Cells** *STEM CELLS AND DEVELOPMENT*
  Wang, P., McKnight, K. D., Wong, D. J., Rodriguez, R. T., Sugiyama, T., Gu, X., Ghodasara, A., Qu, K., Chang, H. Y., Kim, S. K.
  2012; 21 (12): 2273-2287

- **Deconstructing Pancreas Developmental Biology** *COLD SPRING HARBOR PERSPECTIVES IN BIOLOGY*
  Benitez, C. M., Goodyer, W. R., Kim, S. K.
  2012; 4 (6)

- **Gut insulin from Foxo1 loss** *NATURE GENETICS*
  Kim, S. K.
  2012; 44 (4): 363-364
- **Specification of Drosophila Corpora Cardiaca Neuroendocrine Cells from Mesoderm Is Regulated by Notch Signaling** *PLOS GENETICS*
  Park, S., Bustamante, E. L., Antonova, J., McLean, G. W., Kim, S. K.
  2011; 7 (8)
- **Extensive and coordinated transcription of noncoding RNAs within cell-cycle promoters** *NATURE GENETICS*
  Hung, T., Wang, Y., Lin, M. F., Koegel, A. K., Kotake, Y., Grant, G. D., Horlings, H. M., Shah, N., Umbricht, C., Wang, P., Wang, Y., Kong, B., Langerod, et al
  2011; 43 (7): 621-U196
- **Targeting SOX17 in Human Embryonic Stem Cells Creates Unique Strategies for Isolating and Analyzing Developing Endoderm** *CELL STEM CELL*
  Wang, P., Rodriguez, R. T., Wang, J., Ghodasara, A., Kim, S. K.
  2011; 8 (3): 335-346
- **Deconstructing Pancreas Development to Reconstruct Human Islets from Pluripotent Stem Cells** *CELL STEM CELL*
  McKnight, K. D., Wang, P., Kim, S. K.
  2010; 6 (4): 300-308
- **Polycomb protein Ezh2 regulates pancreatic beta-cell Ink4a/Arf expression and regeneration in diabetes mellitus** *GENES & DEVELOPMENT*
  Chen, H., Gu, X., Su, I., Bottino, R., Contreras, J. L., Tarakhovsky, A., Kim, S. K.
  2009; 23 (8): 975-985
- **Fluorescence-activated cell sorting purification of pancreatic progenitor cells** *DIABETES OBESITY & METABOLISM*
  Sugiyama, T., Kim, S. K.
  2008; 10: 179-185
- **Characterization of six new human embryonic stem cell lines (HSF7, -8, -9, -10, -12, and -13) derived under minimal-animal component conditions** *STEM CELLS AND DEVELOPMENT*
  Chavez, S. L., Meneses, J. J., Nguyen, H. N., Kim, S. K., Pera, R. A.
  2008; 17 (3): 535-546
- **Menin controls growth of pancreatic beta-cells in pregnant mice and promotes gestational diabetes mellitus** *SCIENCE*
  Karnik, S. K., Chen, H., McLean, G. W., Heit, J. J., Gu, X., Zhang, A. Y., Fontaine, M., Yen, M. H., Kim, S. K.
  2007; 318 (5851): 806-809
- **Menin-mediated caspase 8 expression in suppressing multiple endocrine neoplasia type 1** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  La, P., Yang, Y., Karnik, S. K., Silva, A. C., Schnepp, R. W., Kim, S. K., Hua, X.
  2007; 282 (43): 31332-31340
- **Glucose infusion in mice - A new model to induce beta-cell replication** *DIABETES*
  Alonso, L. C., Yokoe, T., Zhang, P., Scott, D. K., Kim, S. K., O'Donnell, C. P., Garcia-Ocana, A.
  2007; 56 (7): 1792-1801
- **Wnt signaling regulates pancreatic beta cell proliferation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Rulifson, I. C., Karnik, S. K., Heiser, P. W., Ten Berge, D., Chen, H., Gu, X., Taketo, M. M., Nusse, R., Hebrok, M., Kim, S. K.
  2007; 104 (15): 6247-6252
- **Conserved markers of fetal pancreatic epithelium permit prospective isolation of islet progenitor cells by FACS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Sugiyama, T., Rodriguez, R. T., McLean, G. W., Kim, S. K.
  2007; 104 (1): 175-180
- **The ATP-sensitive potassium (K-ATP) channel-encoded dSUR gene is required for Drosophila heart function and is regulated by tinman** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Akasaka, T., Klinedinst, S., Ocorr, K., Bustamante, E. L., Kim, S. K., Bodmer, R.

2006; 103 (32): 11999-12004

- **NFAT dysregulation by increased dosage of DSCR1 and DYRK1A on chromosome 21** *NATURE*
  Arron, J. R., Winslow, M. M., Polleri, A., Chang, C., Wu, H., Gao, X., Neilson, J. R., Chen, L., Heit, J. J., Kim, S. K., Yamasaki, N., Miyakawa, T., Francke, et al
  2006; 441 (7093): 595-600

- **Conditional expression of Smad7 in pancreatic beta cells disrupts TGF-beta signaling and induces reversible diabetes mellitus** *PLOS BIOLOGY*
  Smart, N. G., Apelqvist, A. A., Gu, X. Y., Harmon, E. B., Topper, J. N., MACDONALD, R. J., Kim, S. K.
  2006; 4 (2): 200-209

- **Intrinsic regulators of pancreatic beta-cell proliferation** *ANNUAL REVIEW OF CELL AND DEVELOPMENTAL BIOLOGY*
  Heit, J. J., Karnik, S. K., Kim, S. K.
  2006; 22: 311-338

- **Menin regulates pancreatic islet growth by promoting histone methylation and expression of genes encoding p27(Kip1) and p18(INK4c)** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Karnik, S. K., Hughes, C. M., Gu, X. Y., Rozenblatt-Rosen, O., McLean, G. W., Xiong, Y., Meyerson, M., Kim, S. K.
  2005; 102 (41): 14659-14664

- **Differentiation of insulin-producing cells from human neural progenitor cells** *PLOS MEDICINE*
  Hori, Y., Gu, X. Y., Xie, X. D., Kim, S. K.
  2005; 2 (4): 347-356

- **GDF11 modulates NGN3(+) islet progenitor cell number and promotes beta-cell differentiation in pancreas development** *DEVELOPMENT*
  Harmon, E. B., Apelqvist, A. A., Smart, N. G., Gu, X. Y., Osborne, D. H., Kim, S. K.
  2004; 131 (24): 6163-6174

- **Conserved mechanisms of glucose sensing and regulation by Drosophila corpora cardiaca cells** *NATURE*
  Kim, S. K., Rulifson, E. J.
  2004; 431 (7006): 316-320

- **Embryonic stem cells and islet replacement in diabetes mellitus** *PEDIATRIC DIABETES*
  Heit, J. J., Kim, S. K.
  2004; 5: 5-15

- **Growth inhibitors promote differentiation of insulin-producing tissue from embryonic stem cells** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Hori, Y., Rulifson, I. C., Tsai, B. C., Heit, J. J., Cahoy, J. D., Kim, S. K.
  2002; 99 (25): 16105-16110

- **Signaling and transcriptional control of pancreatic organogenesis** *CURRENT OPINION IN GENETICS & DEVELOPMENT*
  Kim, S. K., MacDonald, R. J.
  2002; 12 (5): 540-547

- **Ablation of insulin-producing neurons in flies: Growth and diabetic phenotypes** *SCIENCE*
  Rulifson, E. J., Kim, S. K., Nusse, R.
  2002; 296 (5570): 1118-1120

- **Pbx1 inactivation disrupts pancreas development and in Ipf1-deficient mice promotes diabetes mellitus** *NATURE GENETICS*
  Kim, S. K., SELLERI, L., Lee, J. S., Zhang, A. Y., Gu, X. Y., Jacobs, Y., Cleary, M. L.
  2002; 30 (4): 430-435

- **Hedgehog signaling in gastrointestinal development and disease.** *Current molecular medicine*
  Harmon, E. B., Ko, A. H., Kim, S. K.
  2002; 2 (1): 67-82

- **Pancreatic islet cell replacement - Successes and opportunities** *Symposium on Reparative Medicine - Growing Tissues and Organs*
  Kim, S. K.
  NEW YORK ACAD SCIENCES.2002: 41–43

- **Intercellular signals regulating pancreas development and function** *GENES & DEVELOPMENT*
  Kim, S. K., Hebrok, M.
  2001; 15 (2): 111-127
- **Regulation of pancreas development by hedgehog signaling** *DEVELOPMENT*
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