

Stanford



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

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

CONTACT INFORMATION

- **Alternate Contact**

Susan Elliott - Administrative Assistant

Email sue.elliott@stanford.edu

Tel 650-498-7301

Bio

ACADEMIC APPOINTMENTS

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

ADMINISTRATIVE APPOINTMENTS

- Director, Stanford Diabetes Research Center, (2016- present)
- Director, Stanford MSTP, (2008-2013)
- Member, Medical Science Review Board, Juvenile Diabetes Research Foundation, (2002- present)
- Associate Director, Stanford Medical Scientist Training Program, (2000-2008)

HONORS AND AWARDS

- 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://sdr.c.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Organ development requires mechanisms to establish an integrated, stereotyped tissue pattern from multiple distinct cellular components. Many vital organs derive from the endodermal and mesodermal germ layers to form the gastrointestinal and respiratory tracts, yet little is known about the genetic programs that coordinate steps culminating in proper organ morphogenesis and axial position, cell differentiation and physiologic function. Our goal is to identify and understand the pathways that govern organogenesis of the pancreas, a vital organ with endocrine and exocrine functions.

We are using *Drosophila*, chicks and mice, organisms accessible to embryological, genetic and molecular methods, to identify cell interactions and signaling pathways that regulate early steps in pancreatic islet development. Some of the pathways active during ontogeny also regulate pancreatic growth during adulthood, and we are studying the role of these genetic pathways in growth control and function of the mature pancreas in mice. Armed with an understanding of the mechanisms regulating normal development of insulin-producing cells and other islet cells, we have been able to differentiate functional glucose-responsive islets from embryonic stem cells and other cell lines. These are capable of rescuing glucose regulation and survival in experimental animal models of diabetes mellitus. We are now using this in vitro culture system to isolate candidate islet stem/precursor populations from adult human stem cell populations. We are also using *Drosophila* to study neuroendocrine cells that govern metabolism. We have discovered that two cell types, one which produces insulin, the other which produces a glucagon-like peptide called AKH, are crucial regulators of glucose homeostasis in *Drosophila*. Genetic, biochemical, and electrophysiologic studies are being used to elucidate the programs that control development and function of these cells, which comprise the *Drosophila* endocrine 'pancreas'. In turn, we expect that these studies will identify important conserved functions that govern islet cell biology.

CLINICAL TRIALS

- Dakin's Solution in Preventing Radiation Dermatitis in Patients With Breast Cancer Undergoing Radiation Therapy, Not Recruiting

Teaching

COURSES

2019-20

- Elements of Grant Writing: DBIO 234 (Aut)

2018-19

- Elements of Grant Writing: DBIO 234 (Aut)

2016-17

- Development and Disease Mechanisms: DBIO 201 (Aut)
- Elements of Grant Writing: DBIO 234 (Aut)

STANFORD ADVISEES

Med Scholar Project Advisor

Mollie Friedlander, Yoo Jung Kim

Doctoral Dissertation Reader (AC)

Teni Anbarchian, Susanna Brantley, Brittany Flowers, Brian Hsueh

Postdoctoral Faculty Sponsor

Shamik Banerjee, Romina Bevacqua, Charles Chang, Seok Ho Kim, Adriana Urizar, Robert Whitener

Doctoral Dissertation Advisor (AC)

Mollie Friedlander, Vy Nguyen, Krissie Tellez

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

- **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 α Cells into β 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
- **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
- **Age-Dependent Pancreatic Gene Regulation Reveals Mechanisms Governing Human β 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
- **Suppression of insulin production and secretion by a dectetin 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

- **Neonatal beta Cell Development in Mice and Humans Is Regulated by Calcineurin/NFAT** *DEVELOPMENTAL CELL*
Goodyer, W. R., Gu, X., Liu, Y., Bottino, R., Crabtree, G. R., Kim, S. K.
2012; 23 (1): 21-34
- **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
- **Pathways to clinical CLARITY: volumetric analysis of irregular, soft, and heterogeneous tissues in development and disease.** *Scientific reports*
Hsueh, B., Burns, V. M., Pauerstein, P., Holzem, K., Ye, L., Engberg, K., Wang, A. C., Gu, X., Chakravarthy, H., Arda, H. E., Charville, G., Vogel, H., 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., Seoane, J. A., Flowers, B. M., McClendon, J., Biegging-Rolett, K. T., Lee, J., Ivanochko, D., 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., Iliopoulou, B. P., Peiris, H., Pérez-Cruz, M., Baker, J., Hsu, K., Gu, X., Zheng, P. P., Erkers, T., Tang, S. W., Strober, W., Alvarez, M., 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., Willmarth, K. B., Park, K. M., Hsueh, B., Efsun Arda, H., Gu, X., Aghajanian, H., Deisseroth, K., 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., Arda, H. E., Mignardi, M., Beausang, J., Bottino, R., Kim, S. K., Quake, S. R.
2017; 171 (2): 321-30.e14
- **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): 3835-44
- **Gestational Diabetes Mellitus From Inactivation of Prolactin Receptor and MafB in Islet β -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
- **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
- **iPSCs: 10 Years and Counting.** *Cell*
2016; 165 (5): 1041-42
- **Efficient generation of pancreatic β -like cells from the mouse gallbladder.** *Stem cell research*
Wang, Y., Galivo, F., Pelz, C., Haft, A., Lee, J., Kim, S. K., Grompe, M.
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
- **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
- **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
- **Combined modulation of polycomb and trithorax genes rejuvenates # 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
- **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., Schnepf, 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 Ipfl-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*

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- Kim, S. K., Hebrok, M.
2001; 15 (2): 111-127
- **Regulation of pancreas development by hedgehog signaling** *DEVELOPMENT*
Hebrok, M., Kim, S. K., St-Jacques, B., MCMAHON, A. P., Melton, D. A.
2000; 127 (22): 4905-4913
 - **Activin receptor patterning of foregut organogenesis** *GENES & DEVELOPMENT*
Kim, S. K., Hebrok, M., Li, E., Oh, S. P., Schrewe, H., Harmon, E. B., Lee, J. S., Melton, D. A.
2000; 14 (15): 1866-1871
 - **Screening for novel pancreatic genes expressed during embryogenesis** *DIABETES*
Hebrok, M., Kim, S. K., Melton, D. A.
1999; 48 (8): 1550-1556
 - **Pancreas development is promoted by cyclopamine, a Hedgehog signaling inhibitor** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Kim, S. K., Melton, D. A.
1998; 95 (22): 13036-13041
 - **Notochord repression of endodermal Sonic hedgehog permits pancreas development** *GENES & DEVELOPMENT*
Hebrok, M., Kim, S. K., Melton, D. A.
1998; 12 (11): 1705-1713
 - **Notochord to endoderm signaling is required for pancreas development** *DEVELOPMENT*
Kim, S. K., Hebrok, M., Melton, D. A.
1997; 124 (21): 4243-4252
 - **Pancreas development in the chick embryo** *Cold Spring Harbor Symposium on Quantitative Biology - Pattern Formation During Development*
Kim, S. K., Hebrok, M., Melton, D. A.
COLD SPRING HARBOR LAB PRESS, PUBLICATIONS DEPT. 1997: 377-383
 - **Chemotherapy and neutropenia** *HEMATOLOGY-ONCOLOGY CLINICS OF NORTH AMERICA*
Kim, S. K., Demetri, G. D.
1996; 10 (2): 377-?
 - **CONTROL OF CELL-DENSITY AND PATTERN BY INTERCELLULAR SIGNALING IN MYXOCOCCUS DEVELOPMENT** *ANNUAL REVIEW OF MICROBIOLOGY*
Kim, S. K., Kaiser, D., Kuspa, A.
1992; 46: 117-139
 - **INTERCELLULAR SIGNALING IN MYXOCOCCUS DEVELOPMENT - THE ROLE OF C-FACTOR** *TRENDS IN GENETICS*
Kim, S. K.
1991; 7 (11-12): 361-365
 - **C-FACTOR HAS DISTINCT AGGREGATION AND SPORULATION THRESHOLDS DURING MYXOCOCCUS DEVELOPMENT** *JOURNAL OF BACTERIOLOGY*
Kim, S. K., Kaiser, D.
1991; 173 (5): 1722-1728
 - **CELL ALIGNMENT REQUIRED IN DIFFERENTIATION OF MYXOCOCCUS-XANTHUS** *SCIENCE*
Kim, S. K., Kaiser, D.
1990; 249 (4971): 926-928
 - **CELL MOTILITY IS REQUIRED FOR THE TRANSMISSION OF C-FACTOR, AN INTERCELLULAR SIGNAL THAT COORDINATES FRUITING BODY MORPHOGENESIS OF MYXOCOCCUS-XANTHUS** *GENES & DEVELOPMENT*
Kim, S. K., Kaiser, D.
1990; 4 (6): 896-904
 - **PURIFICATION AND PROPERTIES OF MYXOCOCCUS-XANTHUS C-FACTOR, AN INTERCELLULAR SIGNALING PROTEIN** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
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Kim, S. K., Kaiser, D.
1990; 87 (10): 3635-3639

● **C-FACTOR - A CELL CELL SIGNALING PROTEIN REQUIRED FOR FRUITING BODY MORPHOGENESIS OF M-XANTHUS** *CELL*

Kim, S. K., Kaiser, D.
1990; 61 (1): 19-26

● **PARA-DEPENDENT TRANSCRIPTION TERMINATION OF A BACTERIAL OPERON IS ANTAGONIZED BY AN EXTRACHROMOSOMAL GENE-PRODUCT** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Lagos, R., Jiang, R. Z., Kim, S., Goldstein, R.
1986; 83 (24): 9561-9565