

Stanford




James Dunn

Professor of Surgery (Pediatric Surgery) at the Lucile Salter Packard Children's Hospital and, by courtesy, of Bioengineering

Surgery - Pediatric Surgery

 NIH Biosketch available Online

 Curriculum Vitae available Online

CLINICAL OFFICES

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ACADEMIC CONTACT INFORMATION

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Bio

BIO

Dr. Dunn obtained his B.S. degree in Biology and Chemical Engineering from the California Institute of Technology and his M.D. and Ph.D. degrees from Harvard and Massachusetts Institute of Technology. He trained in General Surgery at the UCLA School of Medicine and in Pediatric Surgery at the Riley Hospital for Children in Indianapolis. He was the Professor and Chief of Pediatric Surgery at UCLA, with a joint appointment in the Department of Bioengineering until 2016. Dr. Dunn is the Susan B. Ford Surgeon-in-Chief at the Lucile Packard Children's Hospital, the John A. and Cynthia Fry Gunn Director of Pediatric Surgery, and Professor of Surgery and Bioengineering at the Stanford School of Medicine.

CLINICAL FOCUS

- Pediatric Surgery
- Short Bowel Syndrome
- Intestinal Motility Disorders

ACADEMIC APPOINTMENTS

- Professor - Med Center Line, Surgery - Pediatric Surgery
- Professor - Med Center Line (By courtesy), Bioengineering
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Chief of Pediatric Surgery, Department of Surgery, Stanford, (2016- present)
- Surgeon-in-Chief, Lucile Packard Children's Hospital, (2016- present)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Child Health Research Institute Executive Committee (2016 - present)
- Ex-officio, Lucile Packard Children's Hospital Board of Directors (2016 - present)

PROFESSIONAL EDUCATION

- B.S., California Institute of Technology , Biology and Chemical Engineering (1985)
- M.D., Harvard Medical School , Medicine (1992)
- Ph.D., Massachusetts Institute of Technology , Medical Engineering (1992)
- Internship: UCLA Health Sciences (1993) CA
- Residency: UCLA Health Sciences (1999) CA
- Board Certification: General Surgery, American Board of Surgery (2000)
- Fellowship: Riley Hospital for Children at Indiana University Health (2001) IN
- Board Certification: Pediatric Surgery, American Board of Surgery (2002)

PATENTS

- James Dunn. "United States Patent 9,138,336 Expandable distension device for hollow organ growth", Sep 22, 2015

LINKS

- My Research Laboratory: <http://pediatricsurgery.stanford.edu/research/JDRResearch.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Intestinal lengthening for short bowel syndrome

Intestinal stem cell therapy for intestinal failure

Skin derived precursor cell therapy for enteric neuromuscular dysfunction

Intestinal tissue engineering

Teaching

COURSES

2019-20

- Senior Capstone Design I: BIOE 141A (Aut)

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Bioengineering (Phd Program)
- Pediatric Surgery (Fellowship Program)
- Stem Cell Biology and Regenerative Medicine (Phd Program)

Publications

PUBLICATIONS

- **Tumescent Injections in Subcutaneous Pig Tissue Disperse Fluids Volumetrically and Maintain Elevated Local Concentrations of Additives for Several Hours, Suggesting a Treatment for Drug Resistant Wounds.** *Pharmaceutical research*
Koulakis, J. P., Rouch, J., Huynh, N., Wu, H. H., Dunn, J. C., Putterman, S.
2020; 37 (3): 51
- **Electroacupuncture to Increase Neuronal Stem Cell Growth** *MEDICAL ACUPUNCTURE*
Dubrovsky, G., Ha, D., Thomas, A., Zhu, M., Hubacher, J., Itoh, T., Dunn, J. Y.
2020; 32 (1): 16–23

- **Cutaneous Patches to Monitor Myoelectric Activity of the Gastrointestinal Tract in Postoperative Pediatric Patients** *PEDIATRIC GASTROENTEROLOGY HEPATOLOGY & NUTRITION*
Taylor, J. S., de Ruijter, V., Brewster, R., Navalgund, A., Axelrod, L., Axelrod, S., Dunn, J. Y., Wall, J. K.
2019; 22 (6): 518–26
- **Optimization of In-Continuity Spring-Mediated Intestinal Lengthening.** *Journal of pediatric surgery*
Dubrovsky, G., Taylor, J. S., Thomas, A., Shekherdimian, S., Dunn, J. C.
2019
- **Autologous Transplantation of Skin-Derived Precursor Cells in a Porcine Model.** *Journal of pediatric surgery*
Thomas, A., Taylor, J. S., Huynh, N., Dubrovsky, G., Chadarevian, J., Chen, A., Baker, S., Dunn, J. C.
2019
- **Growth of Small Intestinal Layers Proximal and Distal to the Intestine Undergoing Distraction Enterogenesis**
Wood, L. Y., Taylor, J. S., Hosseini, H. S., Dubrovsky, G., Thomas, A., Dunn, J. Y.
ELSEVIER SCIENCE INC.2019: S204
- **Biomechanical signaling and collagen fiber reorientation during distraction enterogenesis.** *Journal of the mechanical behavior of biomedical materials*
Hosseini, H. S., Wood, L. S., Taylor, J. S., Dubrovsky, G., Portelli, K. I., Thomas, A., Dunn, J. C.
2019; 101: 103425
- **Biomechanics of small intestine during distraction enterogenesis with an intraluminal spring.** *Journal of the mechanical behavior of biomedical materials*
Hosseini, H. S., Taylor, J. S., Wood, L. S., Dunn, J. C.
2019; 101: 103413
- **A Wireless Implantable System for Facilitating Gastrointestinal Motility.** *Micromachines*
Wang, P., Dubrovsky, G., Dunn, J. C., Lo, Y., Liu, W.
2019; 10 (8)
- **Intravenous Fish Oil and Serum Fatty Acid Profiles in Pediatric Patients With Intestinal Failure-Associated Liver Disease** *JOURNAL OF PARENTERAL AND ENTERAL NUTRITION*
Ong, M. L., Venick, R. S., Shew, S. B., Dunn, J. Y., Reyen, L., Grogan, T., Calkins, K. L.
2019; 43 (6): 717–25
- **Long-Term Outcomes in Children With Intestinal Failure-Associated Liver Disease Treated With 6 Months of Intravenous Fish Oil Followed by Resumption of Intravenous Soybean Oil** *JOURNAL OF PARENTERAL AND ENTERAL NUTRITION*
Wang, C., Venick, R. S., Shew, S. B., Dunn, J. Y., Reyen, L., Gou, R., Calkins, K. L.
2019; 43 (6): 708–16
- **The cellular regulators PTEN and BMI1 help mediate NEUROGENIN-3-induced cell cycle arrest.** *The Journal of biological chemistry*
Solorzano-Vargas, R. S., Bjerknes, M., Wu, S. V., Wang, J., Stelzner, M., Dunn, J. C., Dhawan, S., Cheng, H., Georgia, S., Martin, M. G.
2019
- **Delayed appearance of mature ganglia in an infant with an atypical presentation of total colonic and small bowel aganglionosis: a case report.** *BMC pediatrics*
Salimi Jazi, F., Chandler, J. M., Thorson, C. M., Sinclair, T. J., Hazard, F. K., Kerner, J. A., Dutta, S., Dunn, J. C., Chao, S. D.
2019; 19 (1): 93
- **Intestinal Electrical Stimulation to Increase the Rate of Peristalsis** *JOURNAL OF SURGICAL RESEARCH*
Dubrovsky, G., Lo, Y., Wang, P., Wu, M., Nhan Huynh, Liu, W., Dunn, J. Y.
2019; 236: 153–58
- **Intravenous Fish Oil and Serum Fatty Acid Profiles in Pediatric Patients With Intestinal Failure-Associated Liver Disease.** *JPEN. Journal of parenteral and enteral nutrition*
Ong, M. L., Venick, R. S., Shew, S. B., Dunn, J. C., Reyen, L., Grogan, T., Calkins, K. L.
2019
- **Double plication for spring-mediated in-continuity intestinal lengthening in a porcine model**
Dubrovsky, G., Nhan Huynh, Thomas, A., Shekherdimian, S., Dunn, J. Y.
MOSBY-ELSEVIER.2019: 389–92

- **Cutaneous Patches to Monitor Myoelectric Activity of the Gastrointestinal Tract in Postoperative Pediatric Patients.** *Pediatric gastroenterology, hepatology & nutrition*
Taylor, J. S., de Ruijter, V., Brewster, R., Naval Gund, A., Axelrod, L., Axelrod, S., Dunn, J. C., Wall, J. K.
2019; 22 (6): 518–26
- **Intestinal epithelial replacement by transplantation of cultured murine and human cells into the small intestine.** *PLoS one*
Khalil, H. A., Hong, S. N., Rouch, J. D., Scott, A., Cho, Y., Wang, J., Lewis, M. S., Martin, M. G., Dunn, J. C., Stelzner, M. G.
2019; 14 (5): e0216326
- **Intestinal lengthening via multiple in-continuity springs**
Dubrovsky, G., Nhan Huynh, Thomas, A., Shekherdimian, S., Dunn, J. Y.
W B SAUNDERS CO-ELSEVIER INC.2019: 39–43
- **Long-Term Outcomes in Children With Intestinal Failure-Associated Liver Disease Treated With 6 Months of Intravenous Fish Oil Followed by Resumption of Intravenous Soybean Oil.** *JPEN. Journal of parenteral and enteral nutrition*
Wang, C., Venick, R. S., Shew, S. B., Dunn, J. C., Reyen, L., Gou, R., Calkins, K. L.
2018
- **Intestinal lengthening via multiple in-continuity springs.** *Journal of pediatric surgery*
Dubrovsky, G., Huynh, N., Thomas, A., Shekherdimian, S., Dunn, J. C.
2018
- **Disrupting the LINC complex in smooth muscle cells reduces aortic disease in a mouse model of Hutchinson-Gilford progeria syndrome** *SCIENCE TRANSLATIONAL MEDICINE*
Kim, P. H., Luu, J., Heizer, P., Tu, Y., Weston, T. A., Chen, N., Lim, C., Li, R. L., Lin, P., Dunn, J. Y., Hodzic, D., Young, S. G., Fong, et al
2018; 10 (460)
- **Bioengineering functional smooth muscle with spontaneous rhythmic contraction in vitro** *SCIENTIFIC REPORTS*
Kobayashi, M., Khalil, H. A., Lei, N., Wang, Q., Wang, K., Wu, B. M., Dunn, J. Y.
2018; 8: 13544
- **Double plication for spring-mediated intestinal lengthening of a defunctionalized Roux limb** *JOURNAL OF PEDIATRIC SURGERY*
Dubrovsky, G., Nhan Huynh, Thomas, A., Shekherdimian, S., Dunn, J. Y.
2018; 53 (9): 1806–10
- **Fluid flow in tumescent subcutaneous tissue observed with 3D scanning: massage accelerates injection dispersal** *BIOMEDICAL PHYSICS & ENGINEERING EXPRESS*
Koulakis, J. P., Dubrovsky, G., Huynh, N., Rouch, J., Dunn, J., Putterman, S.
2018; 4 (4)
- **Mechanisms for intestinal regeneration** *CURRENT OPINION IN PEDIATRICS*
Dubrovsky, G., Dunn, J. Y.
2018; 30 (3): 424–29
- **Mechanically induced development and maturation of human intestinal organoids in vivo** *NATURE BIOMEDICAL ENGINEERING*
Poling, H. M., Wu, D., Brown, N., Baker, M., Hausfeld, T. A., Huynh, N., Chaffron, S., Dunn, J. Y., Hogan, S. P., Wells, J. M., Helmrath, M. A., Mahe, M. M.
2018; 2 (6): 429–42
- **Bioengineered intestinal muscularis complexes with long-term spontaneous and periodic contractions** *PLOS ONE*
Wang, Q., Wang, K., Solorzano-Vargas, R., Lin, P., Walther, C. M., Thomas, A., Martin, M. G., Dunn, J. Y.
2018; 13 (5): e0195315
- **Subcutaneous cefazolin to reduce surgical site infections in a porcine model** *JOURNAL OF SURGICAL RESEARCH*
Dubrovsky, G., Huynh, N., Rouch, J. D., Koulakis, J. P., Nicolau, D. P., Sutherland, C. A., Putterman, S., Dunn, J. Y.
2018; 224: 156–59
- **Three-dimensionally printed surface features to anchor endoluminal spring for distraction enterogenesis.** *PLoS one*
Huynh, N., Dubrovsky, G., Rouch, J. D., Scott, A., Chiang, E., Nguyen, T., Wu, B. M., Shekherdimian, S., Krummel, T. M., Dunn, J. C.
2018; 13 (7): e0200529

- **Mechanically induced development and maturation of human intestinal organoids in vivo.** *Nature biomedical engineering*
Poling, H. M., Wu, D., Brown, N., Baker, M., Hausfeld, T. A., Huynh, N., Chaffron, S., Dunn, J. C., Hogan, S. P., Wells, J. M., Helmrath, M. A., Mahe, M. M.
2018; 2 (6): 429–42
- **A Wireless Implant for Gastrointestinal Motility Disorders.** *Micromachines*
Lo, Y. K., Wang, P. M., Dubrovsky, G., Wu, M. D., Chan, M., Dunn, J. C., Liu, W.
2018; 9 (1)
- **INTERSTITIAL MATRIX PREVENTS THERAPEUTIC ULTRASOUND FROM CAUSING INERTIAL CAVITATION IN TUMESCENT SUBCUTANEOUS TISSUE** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Koulakis, J. P., Rouch, J., Huynh, N., Dubrovsky, G., Dunn, J. Y., Putterman, S.
2018; 44 (1): 177–86
- **A Wireless Implant for Gastrointestinal Motility Disorders** *MICROMACHINES*
Lo, Y., Wang, P., Dubrovsky, G., Wu, M., Chan, M., Dunn, J. Y., Liu, W.
2018; 9 (1)
- **Lgr5 Stem Cell Proliferation from Spring-Mediated Distraction Enterogenesis in a Mouse Model**
Huynh, N., Dubrovsky, G., Rouch, J. D., Martin, M. G., Dunn, J. C.
ELSEVIER SCIENCE INC.2017: S152–S153
- **Feasibility and scalability of spring parameters in distraction enterogenesis in a murine model** *JOURNAL OF SURGICAL RESEARCH*
Nhan Huynh, Dubrovsky, G., Rouch, J. D., Scott, A., Stelzner, M., Shekherdimian, S., Dunn, J. Y.
2017; 215: 219–24
- **Spring-Mediated Intestinal Lengthening in a Porcine Model**
Dubrovsky, G., Nhan Huynh, Rouch, J. D., Scott, A., Thomas, A., Dunn, J. Y., Shekherdimian, S.
LIPPINCOTT WILLIAMS & WILKINS.2017: S29–S30
- **Feasibility and Scalability of Spring Parameters in Distraction Enterogenesis in a Murine Model**
Nhan Huynh, Dubrovsky, G., Rouch, J. D., Scott, A., Stelzner, M., Shekherdimian, S., Dunn, J. Y.
LIPPINCOTT WILLIAMS & WILKINS.2017: S30
- **New insights and interventions for short bowel syndrome.** *Current pediatrics reports*
Rouch, J. D., Dunn, J. C.
2017; 5 (1): 1-5
- **A novel culture system for adult porcine intestinal crypts** *CELL AND TISSUE RESEARCH*
Khalil, H. A., Lei, N. Y., Brinkley, G., Scott, A., Wang, J., Kar, U. K., Jabaji, Z. B., Lewis, M., Martin, M. G., Dunn, J. C., Stelzner, M. G.
2016; 365 (1): 123-134
- **Basic fibroblast growth factor eluting microspheres enhance distraction enterogenesis** *JOURNAL OF PEDIATRIC SURGERY*
Rouch, J. D., Scott, A., Jabaji, Z. B., Chiang, E., Wu, B. M., Lee, S. L., Shekherdimian, S., Dunn, J. C.
2016; 51 (6): 960-965
- **Long-term renewable human intestinal epithelial stem cells as monolayers: A potential for clinical use** *JOURNAL OF PEDIATRIC SURGERY*
Scott, A., Rouch, J. D., Jabaji, Z., Khalil, H. A., Solorzano, S., Lewis, M., Martin, M. G., Stelzner, M. G., Dunn, J. C.
2016; 51 (6): 995-1000
- **Mechanical lengthening in multiple intestinal segments in-series** *JOURNAL OF PEDIATRIC SURGERY*
Scott, A., Rouch, J. D., Huynh, N., Chiang, E., Shekherdimian, S., Lee, S. L., Wu, B. M., Dunn, J. C.
2016; 51 (6): 957-959
- **Development of Functional Microfold (M) Cells from Intestinal Stem Cells in Primary Human Enteroids** *PLOS ONE*
Rouch, J. D., Scott, A., Lei, N. Y., Solorzano-Vargas, R. S., Wang, J., Hanson, E. M., Kobayashi, M., Lewis, M., Stelzner, M. G., Dunn, J. C., Eckmann, L., Martin, M. G.
2016; 11 (1)
- **Concise Review: The Potential Use of Intestinal Stem Cells to Treat Patients With Intestinal Failure.** *Stem cells translational medicine*
Hong, S. N., Dunn, J. C., Stelzner, M., Martín, M. G.

2016

- **Intestinal Bioengineering.** *Clinical transplants*
Dunn, J. C.
2016; 32: 1-4
- **Scalability of an endoluminal spring for distraction enterogenesis.** *Journal of pediatric surgery*
Rouch, J. D., Huynh, N., Scott, A., Chiang, E., Wu, B. M., Shekherdimian, S., Dunn, J. C.
2016; 51 (12): 1988–92
- **Mouse model of endoscopically ablated enteric nervous system** *JOURNAL OF SURGICAL RESEARCH*
Khalil, H. A., Kobayashi, M., Rana, P., Wagner, J. P., Scott, A., Yoo, J., Dunn, J. C.
2016; 200 (1): 117-121
- **Spring-mediated distraction enterogenesis in-continuity.** *Journal of pediatric surgery*
Huynh, N., Rouch, J. D., Scott, A., Chiang, E., Wu, B. M., Shekherdimian, S., Dunn, J. C.
2016; 51 (12): 1983–87
- **A multicenter study to standardize reporting and analyses of fluorescence-activated cell-sorted murine intestinal epithelial cells** *AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY*
Magness, S. T., Puthoff, B. J., Crissey, M. A., Dunn, J., Henning, S. J., Houchen, C., Kaddis, J. S., Kuo, C. J., Li, L., Lynch, J., Martin, M. G., May, R., Niland, et al
2013; 305 (8): G542-G551
- **A nomenclature for intestinal in vitro cultures** *AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY*
Stelzner, M., Helmuth, M., Dunn, J. C., Henning, S. J., Houchen, C. W., Kuo, C., Lynch, J., Li, L., Magness, S. T., Martin, M. G., Wong, M. H., Yu, J.
2012; 302 (12): G1359-G1363
- **Risk Factors for Parenteral Nutrition-associated Liver Disease Following Surgical Therapy for Necrotizing Enterocolitis** *JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION*
Duro, D., Mitchell, P. D., Kalish, L. A., Martin, C., Mccarthy, M., Jaksic, T., Dunn, J., Brandt, M. L., Nobuhara, K. K., Sylvester, K. G., Moss, R. L., Duggan, C.
2011; 52 (5): 595-600
- **Risk Factors for Intestinal Failure in Infants with Necrotizing Enterocolitis: A Glaser Pediatric Research Network Study** *JOURNAL OF PEDIATRICS*
Duro, D., Kalish, L. A., Johnston, P., Jaksic, T., Mccarthy, M., Martin, C., Dunn, J. C., Brandt, M., Nobuhara, K. K., Sylvester, K. G., Moss, R. L., Duggan, C.
2010; 157 (2): 203-U50