



Stuart Goodman, MD, PhD

The Robert L. and Mary Ellenburg Professor in Surgery

Orthopaedic Surgery

 NIH Biosketch available Online

CLINICAL OFFICES

- **Joint Replacement Center**

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ACADEMIC CONTACT INFORMATION

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Bio

BIO

Brief Biography: Stuart B. Goodman MD MSc PhD FRCSC FACS FBSE

Stuart B. Goodman is the Robert L. and Mary Ellenburg Professor of Surgery, and Professor with Tenure in the Department of Orthopaedic Surgery at Stanford University. He has a courtesy appointment in the Department of Bioengineering, and is a Fellow of the Institute of Chemistry, Engineering and Medicine for Human Health (ChEM-H) at Stanford University. He was Chief of Orthopaedic Surgery at Stanford University from 1994-2002. Dr. Goodman received his BSc, MD and MSc (Institute of Medical Science) from the University of Toronto, and his PhD in Orthopedic Medical Science from Lund University in Sweden. He is a Fellow of the Royal College of Surgeons (Canada), the American Academy of Orthopaedic Surgeons and the American College of Surgeons. Dr. Goodman's clinical practice concentrates on adult reconstructive surgery. His clinical research interests center on the outcome of surgery for arthritis including primary and revision total joint replacement, juvenile arthritis, and osteonecrosis of the hip and knee. His basic science interests center on biocompatibility of orthopaedic implants, inflammation, and musculoskeletal tissue regeneration and repair. Dr. Goodman is a member of numerous academic organizations including the AAOS Biological Implants Committee (Chairman), and is a former member of the AAOS Biomedical Engineering Committee. He is a member of the Hip Society, Knee Society and AAHKS, a consultant to the Orthopaedic and Rehabilitation Devices Advisory Panel of the FDA, and former vice-chairman of the Musculoskeletal Tissue Engineering study section at NIH. Dr. Goodman is on the editorial board of the Journal of Orthopaedic Research (Associate Editor), Clinical Orthopaedics (Deputy Editor-Hip Society Liaison), Biomaterials (Associate Editor), Journal of Arthroplasty, Journal of Biomedical Materials Research, and other journals, and is a manuscript reviewer for over 20 journals in the fields of orthopaedic surgery, arthritis, bioengineering and biomaterials. Dr. Goodman has published over 400 peer-reviewed manuscripts in medical and bioengineering journals. Dr. Goodman and co-workers have received awards for their research from the Society for Biomaterials, Orthopaedic Research Society, the American Orthopaedic Association, Western Orthopaedic Association, and the Association of Bone and Joint Surgeons. Dr. Goodman was awarded the Clemson Award for Basic Research from the Society For Biomaterials in May 2000. He was the President of the Society For Biomaterials (2001-2) and served on the Board of Directors of the Orthopaedic Research Society. Dr. Goodman served as Co-Chair for the 1995, 2000 and 2007 NIH/AAOS-sponsored workshops on Implant Wear. Dr. Goodman was recognized as a Fellow, Biomaterials Science and Engineering (FBSE) by the International Union of Societies, Biomaterials Science and Engineering in May 2004, a Fellow of the Japanese Society of the Promotion of Science in 2011, and a Fellow of the American Institute of Medical and Biological Engineers in 2012.

Dr. Goodman serves as a consultant for several companies including Biomimetica, Accelalox, Integra and Wright Medical Technology.

CLINICAL FOCUS

- Adult Reconstruction- Lower Extremity
- Orthopaedic Surgery
- Osteonecrosis - hip and knee
- primary and revision hip and knee replacement

ACADEMIC APPOINTMENTS

- Professor, Orthopaedic Surgery
- Member, Bio-X
- Faculty Fellow, Stanford ChEM-H

ADMINISTRATIVE APPOINTMENTS

- Fellow, Institute for Chemistry, Engineering and Medicine for Human Health (ChEM-H), Stanford University, (2014- present)
- Professor (by courtesy), Department of Bioengineering, Stanford University, (2011- present)
- Fellowship Director, Orthopaedic Adult Reconstruction, Stanford University, (2008- present)
- Affiliated Faculty – Department of Bioengineering, Stanford University, (2007- present)
- Robert and Mary Ellenburg Professor of Surgery, Stanford University, (2006- present)
- Affiliated Faculty – Stanford Center on Longevity, Stanford University, (2005- present)
- Professor, Orthopaedic Surgery, Stanford University, (2002- present)
- Associated Faculty - Biomechanical Engineering Program, Mechanical Engineering Department, Stanford University, (1990- present)

PROFESSIONAL EDUCATION

- Internship: Toronto General Hospital Postgraduate Education (1979) Canada
- Residency: University of Toronto (1984) Canada
- Board Certification: Orthopaedic Surgery, American Board of Orthopaedic Surgery (1987)
- Fellowship: Sunnybrook Medical Center (1985) Canada
- Fellowship: Wellesley Hospital (1985) Canada
- Medical Education: University of Toronto (1978) Canada

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

As an academic orthopaedic surgeon, my interests center on adult reconstructive surgery including total joint replacement, osteotomies and the fixation of fractures.

Both clinical and basic science investigations are ongoing.

My specific research interests include the following:

1. the biological aspects of the interface between orthopaedic implants/biomaterials and bone
2. total joint replacement: prosthesis design, biomechanics, biomaterials, mechanisms of failure, imaging etc
3. tissue engineering and mesenchymal tissue differentiation

4. arthritis: etiology, diagnosis, imaging, treatment, outcomes

CLINICAL TRIALS

- Use of PET/MR Imaging in Chronic Pain, Recruiting

Teaching

STANFORD ADVISEES

Med Scholar Project Advisor

Karthik Nathan

Postdoctoral Faculty Sponsor

Yusuke Kohno, Monica Romero Lopez

Postdoctoral Research Mentor

Yusuke Kohno, Monica Romero Lopez

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Adult Reconstruction (Fellowship Program)
- Bioengineering (Phd Program)

Publications

PUBLICATIONS

- **Low inpatient variability of histomorphological findings in periprosthetic tissues from revised metal/ceramic on polyethylene joint arthroplasties** *JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART B-APPLIED BIOMATERIALS*
Vaculova, J., Gallo, J., Hurnik, P., Motyka, O., Goodman, S. B., Dvorackova, J.
2018; 106 (5): 2008–18
- **Early-stage osteonecrosis of the femoral head: where are we and where are we going in year 2018?** *INTERNATIONAL ORTHOPAEDICS*
Larson, E., Jones, L. C., Goodman, S. B., Koo, K., Cui, Q.
2018; 42 (7): 1723–28
- **Cryptotanshinone Protects Cartilage against Developing Osteoarthritis through the miR-106a-5p/GLIS3 Axis** *MOLECULAR THERAPY-NUCLEIC ACIDS*
Ji, Q., Qi, D., Xu, X., Xu, Y., Goodman, S. B., Kang, L., Song, Q., Fan, Z., Maloney, W. J., Wang, Y.
2018; 11: 170–79
- **Protocol-Driven Revision for Stiffness After Total Knee Arthroplasty Improves Motion and Clinical Outcomes.** *The Journal of arthroplasty*
Hug, K. T., Amanatullah, D. F., Huddleston, J. I., Maloney, W. J., Goodman, S. B.
2018
- **miR-223-3p Inhibits Human Osteosarcoma Metastasis and Progression by Directly Targeting CDH6** *MOLECULAR THERAPY*
Ji, Q., Xu, X., Song, Q., Xu, Y., Tai, Y., Goodman, S. B., Bi, W., Xu, M., Jiao, S., Maloney, W. J., Wang, Y.
2018; 26 (5): 1299–1312
- **Are New Technologies Being Introduced and Adopted Appropriately in Orthopedic Practice?** *ORTHOPEDICS*
Goodman, S. B.
2018; 41 (3): 126–27
- **Obesity Is Independently Associated With Early Aseptic Loosening in Primary Total Hip Arthroplasty** *JOURNAL OF ARTHROPLASTY*
Goodnough, L. H., Finlay, A. K., Huddleston, J. I., Goodman, S. B., Maloney, W. J., Amanatullah, D. F.
2018; 33 (3): 882–86

- **Customized, degradable, functionally graded scaffold for potential treatment of early stage osteonecrosis of the femoral head** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Kawai, T., Shanjani, Y., Fazeli, S., Behn, A. W., Okuzu, Y., Goodman, S. B., Yang, Y. P.
2018; 36 (3): 1002–11
- **The biological basis for concentrated iliac crest aspirate to enhance core decompression in the treatment of osteonecrosis.** *International orthopaedics*
Goodman, S. B.
2018
- **Editorial Comment: 2017 Hip Society Proceedings** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Goodman, S. B.
2018; 476 (2): 214–15
- **Particle disease really does exist An evidence based rebuttal to Dr. Mjoberg's opinion letter** *ACTA ORTHOPAEDICA*
Pajarinen, J., Gallo, J., Takagi, M., Goodman, S. B.
2018; 89 (1): 133–36
- **Mesenchymal stem cell-macrophage crosstalk and bone healing.** *Biomaterials*
Pajarinen, J., Lin, T., Gibon, E., Kohno, Y., Maruyama, M., Nathan, K., Lu, L., Yao, Z., Goodman, S. B.
2018
- **Implant-Associated Bacterial Biofilm and Quorum Sensing in Periprosthetic Joint Infections.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Mooney, J. A., Pridgen, E. M., Manasherob, R., Suh, G., Blackwell, H. E., Barron, A. E., Bollyky, P. L., Goodman, S. B., Amanatullah, D. F.
2018
- **Outcome of 4 Surgical Treatments for Wear and Osteolysis of Cementless Acetabular Components (vol 32, pg 2799, 2017)** *JOURNAL OF ARTHROPLASTY*
Narkbunnam, R., Amanatullah, D. F., Electricwala, A. J., Huddleston, J. I., Maloney, W. J., Goodman, S. B.
2018; 33 (1): 308
- **Metal-on-metal total hip arthroplasty is not associated with cardiac disease** *BONE & JOINT JOURNAL*
Goodnough, L. H., Bala, A., Huddleston, J. I., Goodman, S. B., Maloney, W. J., Amanatullah, D. F.
2018; 100B (1): 28–32
- **Production of GFP and Luciferase-Expressing Reporter Macrophages for In Vivo Bioluminescence Imaging.** *Methods in molecular biology (Clifton, N.J.)*
Pajarinen, J., Lin, T., Goodman, S. B.
2018; 1790: 99–111
- **Perioperative Pain Management for Total Knee Arthroplasty: Need More Focus on the Forest and Less on the Trees.** *Anesthesiology*
Webb, C. A., Madison, S., Goodman, S. B., Mariano, E. R., Horn, J. L.
2018; 128 (2): 420–21
- **Preconditioning of murine mesenchymal stem cells synergistically enhanced immunomodulation and osteogenesis** *STEM CELL RESEARCH & THERAPY*
Lin, T., Pajarinen, J., Nabeshima, A., Lu, L., Nathan, K., Jansen, E., Yao, Z., Goodman, S. B.
2017; 8
- **Tissue-Invasive T Cells in Rheumatoid Arthritis**
Weyand, C. M., Shen, Y., Li, Y., Matteson, E. L., Goodman, S., Goronzy, J.
WILEY.2017
- **miR-216a inhibits osteosarcoma cell proliferation, invasion and metastasis by targeting CDK14** *CELL DEATH & DISEASE*
Ji, Q., Xu, X., Li, L., Goodman, S. B., Bi, W., Xu, M., Xu, Y., Fan, Z., Maloney, W. J., Ye, Q., Wang, Y.
2017; 8: e3103
- **Inflammation, ageing, and bone regeneration** *JOURNAL OF ORTHOPAEDIC TRANSLATION*
Gibon, E., Lu, L. Y., Nathan, K., Goodman, S. B.
2017; 10: 28–35
- **Inflammation and the musculoskeletal system** *JOURNAL OF ORTHOPAEDIC TRANSLATION*
Goodman, S. B., Qin, L.

2017; 10: A1–A2

- **Danger of frustrated sensors: Role of Toll-like receptors and NOD-like receptors in aseptic and septic inflammations around total hip replacements** *JOURNAL OF ORTHOPAEDIC TRANSLATION*
Takagi, M., Takakubo, Y., Pajarinen, J., Naganuma, Y., Oki, H., Maruyama, M., Goodman, S. B.
2017; 10: 68–85
- **Continuous Femoral Nerve Catheters Decrease Opioid-Related Side Effects and Increase Home Disposition Rates Among Geriatric Hip Fracture Patients.** *Journal of orthopaedic trauma*
Arsoy, D., Gardner, M. J., Amanatullah, D. F., Huddleston, J. I., Goodman, S. B., Maloney, W. J., Bishop, J. A.
2017; 31 (6): e186-e189
- **The effect of desflurane versus propofol anesthesia on postoperative delirium in elderly obese patients undergoing total knee replacement: A randomized, controlled, double-blinded clinical trial.** *Journal of clinical anesthesia*
Tanaka, P., Goodman, S., Sommer, B. R., Maloney, W., Huddleston, J., Lemmens, H. J.
2017; 39: 17-22
- **Venous Thromboembolism Prophylaxis After TKA: Aspirin, Warfarin, Enoxaparin, or Factor Xa Inhibitors?** *Clinical orthopaedics and related research*
Bala, A., Huddleston, J. I., Goodman, S. B., Maloney, W. J., Amanatullah, D. F.
2017
- **CCL2/CCR2, but not CCL5/CCR5, mediates monocyte recruitment, inflammation and cartilage destruction in osteoarthritis** *ANNALS OF THE RHEUMATIC DISEASES*
Raghu, H., Lepus, C. M., Wang, Q., Wong, H. H., Lingampalli, N., Oliviero, F., Punzi, L., Giori, N. J., Goodman, S. B., Chu, C. R., Sokolove, J. B., Robinson, W. H.
2017; 76 (5)
- **Cortical Strut Allograft Support of Modular Femoral Junctions During Revision Total Hip Arthroplasty** *JOURNAL OF ARTHROPLASTY*
Lim, C. T., Amanatullah, D. F., Huddleston, J. I., Hwang, K. L., Maloney, W. J., Goodman, S. B.
2017; 32 (5): 1586-1592
- **Use of Cortical Strut Allograft After Extended Trochanteric Osteotomy in Revision Total Hip Arthroplasty** *JOURNAL OF ARTHROPLASTY*
Lim, C. T., Amanatullah, D. F., Huddleston, J. I., Hwang, K. L., Maloney, W. J., Goodman, S. B.
2017; 32 (5): 1599-1605
- **Radiographic scoring system for the evaluation of stability of cementless acetabular components in the presence of osteolysis** *BONE & JOINT JOURNAL*
Narkbunnam, R., Amanatullah, D. F., Electricwala, A. J., Huddleston, J. I., Maloney, W. J., Goodman, S. B.
2017; 99-B (5): 601-606
- **Outcome of 4 Surgical Treatments for Wear and Osteolysis of Cementless Acetabular Components.** *journal of arthroplasty*
Narkbunnam, R., Amanatullah, D. F., Electricwala, A. J., Huddleston, J. I., Maloney, W. J., Goodman, S. B.
2017
- **Mesenchymal stem cells in the aseptic loosening of total joint replacements.** *Journal of biomedical materials research. Part A*
Pajarinen, J., Lin, T., Nabeshima, A., Jämsen, E., Lu, L., Nathan, K., Yao, Z., Goodman, S. B.
2017; 105 (4): 1195-1207
- **Total hip arthroplasty using a monobloc cementless femoral stem for patients with childhood Perthes' disease** *BONE & JOINT JOURNAL*
Lee, K. H., Jo, W., Ha, Y. C., Lee, Y. K., Goodman, S. B., Koo, K. H.
2017; 99B (4): 440-444
- **Total hip arthroplasty using a monobloc cementless femoral stem for patients with childhood Perthes' disease.** *bone & joint journal*
Lee, K. H., Jo, W., Ha, Y. C., Lee, Y. K., Goodman, S. B., Koo, K. H.
2017; 99-B (4): 440-444
- **Revision Hip Arthroplasty Using a Modular, Cementless Femoral Stem: Intermediate-Term Follow-Up** *JOURNAL OF ARTHROPLASTY*
Sivanathan, S., Lim, C., Narkbunnam, R., Sox-Harris, A., Huddleston, J. I., Goodman, S. B.
2017; 32 (4): 1245-1249
- **Pro-inflammatory M1 macrophages promote osteogenesis by mesenchymal stem cells via the COX-2-prostaglandin E2 pathway.** *Journal of orthopaedic research*

- Lu, L. Y., Loi, F., Nathan, K., Lin, T., Pajarinen, J., Gibon, E., Nabeshima, A., Cordova, L., Jämsen, E., Yao, Z., Goodman, S. B.
2017
- **The Direct Anterior Approach is Associated With Early Revision Total Hip Arthroplasty.** *journal of arthroplasty*
Eto, S., Hwang, K., Huddleston, J. I., Amanatullah, D. F., Maloney, W. J., Goodman, S. B.
2017; 32 (3): 1001-1005
 - **Weight Gain After Primary Total Knee Arthroplasty Is Associated With Accelerated Time to Revision for Aseptic Loosening.** *journal of arthroplasty*
Lim, C. T., Goodman, S. B., Huddleston, J. I., Harris, A. H., Bhowmick, S., Maloney, W. J., Amanatullah, D. F.
2017
 - **Correlations between macrophage polarizing cytokines, inflammatory mediators, osteoclast activity, and toll-like receptors in tissues around aseptically loosened hip implants** *JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART A*
Jamsen, E., Kouri, V., Ainola, M., Goodman, S. B., Nordstrom, D. C., Eklund, K. K., Pajarinen, J.
2017; 105 (2): 454-463
 - **Response to Letter to the Editor on 'Tibiofemoral Dislocation After Total Knee Arthroplasty'** *JOURNAL OF ARTHROPLASTY*
Jethanandani, R. G., Maloney, W. J., Huddleston, J. I., Goodman, S. B., Amanatullah, D. F.
2017; 32 (2): 700-700
 - **Mutant CCL2 protein coating mitigates wear particle-induced bone loss in a murine continuous polyethylene infusion model** *BIOMATERIALS*
Nabeshima, A., Pajarinen, J., Lin, T., Jiang, X., Gibon, E., Cordova, L. A., Loi, F., Lu, L., Jamsen, E., Egashira, K., Yang, F., Yao, Z., Goodman, et al
2017; 117: 1-9
 - **Decreased osteogenesis in mesenchymal stem cells derived from the aged mouse is associated with enhanced NF- κ B activity.** *Journal of orthopaedic research*
Lin, T., Gibon, E., Loi, F., Pajarinen, J., Córdoba, L. A., Nabeshima, A., Lu, L., Yao, Z., Goodman, S. B.
2017; 35 (2): 281-288
 - **NF- κ B as a Therapeutic Target in Inflammatory-Associated Bone Diseases.** *Advances in protein chemistry and structural biology*
Lin, T., Pajarinen, J., Lu, L., Nabeshima, A., Cordova, L. A., Yao, Z., Goodman, S. B.
2017; 107: 117-154
 - **Effect of Perioperative Gabapentin on Postoperative Pain Resolution and Opioid Cessation in a Mixed Surgical Cohort: A Randomized Clinical Trial.** *JAMA surgery*
Hah, J., Mackey, S. C., Schmidt, P., McCue, R., Humphreys, K., Trafton, J., Efron, B., Clay, D., Sharifzadeh, Y., Ruchelli, G., Goodman, S., Huddleston, J., Maloney, et al
2017
 - **100% Clean and renewable wind, water, and sunlight all-sector energy roadmaps for 139 countries of the world** *JOULE*
Jacobson, M. Z., Delucchi, M. A., Bauer, Z. A., Goodman, S. C., Chapman, W. E., Cameron, M. A., et al
2017; 1 (1): 108-121
 - **Murine Model of Progressive Orthopaedic Wear Particle Induced Chronic Inflammation and Osteolysis.** *Tissue engineering. Part C, Methods*
Pajarinen, J., Nabeshima, A., Lin, T. H., Sato, T., Gibon, E., Jämsen, E., Lu, L., Nathan, K., Yao, Z., Goodman, S. B.
2017
 - **CCL2, CCL5 and IGF-1 Participate in The Immunomodulation of Osteogenesis during M1/M2 Transition In Vitro.** *Journal of biomedical materials research. Part A*
Córdova, L. A., Loi, F., Lin, T. H., Gibon, E., Pajarinen, J., Nabeshima, A., Lu, L., Yao, Z., Goodman, S. B.
2017
 - **Orthopaedic Wear Particle-induced Bone Loss and Exogenous Macrophage Infiltration is mitigated by Local Infusion of NF- κ B Decoy Oligodeoxynucleotide.** *Journal of biomedical materials research. Part A*
Lin, T., Pajarinen, J., Nabeshima, A., Córdoba, L. A., Loi, F., Gibon, E., Lu, L., Nathan, K., Jämsen, E., Yao, Z., Goodman, S. B.
2017
 - **Establishment of NF- κ B sensing and interleukin-4 secreting mesenchymal stromal cells as an "on-demand" drug delivery system to modulate inflammation.** *Cytotherapy*
Lin, T., Pajarinen, J., Nabeshima, A., Lu, L., Nathan, K., Yao, Z., Goodman, S. B.
2017

- **Elevated Body Mass Index Is Associated With Early Total Knee Revision for Infection** *JOURNAL OF ARTHROPLASTY*
Electricwala, A. J., Jethanandani, R. G., Narkbunnam, R., Huddleston, J. I., Maloney, W. J., Goodman, S. B., Amanatullah, D. F.
2017; 32 (1): 252-255
- **Cortical Strut Allograft Support of Modular Femoral Junctions During Revision Total Hip Arthroplasty.** *journal of arthroplasty*
Lim, C. T., Amanatullah, D. F., Huddleston, J. I., Hwang, K. L., Maloney, W. J., Goodman, S. B.
2016
- **Use of Cortical Strut Allograft After Extended Trochanteric Osteotomy in Revision Total Hip Arthroplasty.** *journal of arthroplasty*
Lim, C. T., Amanatullah, D. F., Huddleston, J. I., Hwang, K. L., Maloney, W. J., Goodman, S. B.
2016
- **CCL2/CCR2, but not CCL5/CCR5, mediates monocyte recruitment, inflammation and cartilage destruction in osteoarthritis.** *Annals of the rheumatic diseases*
Raghu, H., Lepus, C. M., Wang, Q., Wong, H. H., Lingampalli, N., Oliviero, F., Punzi, L., Giori, N. J., Goodman, S. B., Chu, C. R., Sokolove, J. B., Robinson, W. H.
2016
- **Revision Hip Arthroplasty Using a Modular, Cementless Femoral Stem: Intermediate-Term Follow-Up.** *journal of arthroplasty*
Sivanathan, S., Lim, C., Narkbunnam, R., Sox-Harris, A., Huddleston, J. I., Goodman, S. B.
2016
- **Iron oxide nanoparticles inhibit tumour growth by inducing pro-inflammatory macrophage polarization in tumour tissues.** *Nature nanotechnology*
Zanganeh, S., Hutter, G., Spitzer, R., Lenkov, O., Mahmoudi, M., Shaw, A., Pajarinen, J. S., Nejadnik, H., Goodman, S., Moseley, M., Coussens, L. M., Daldrup-Link, H. E.
2016; 11 (11): 986-994
- **Deficient Activity of the Nuclease MRE11A Induces T Cell Aging and Promotes Arthritogenic Effector Functions in Patients with Rheumatoid Arthritis.** *Immunity*
Li, Y., Shen, Y., Hohensinner, P., Ju, J., Wen, Z., Goodman, S. B., Zhang, H., Goronzy, J. J., Weyand, C. M.
2016; 45 (4): 903-916
- **Tibiofemoral Dislocation After Total Knee Arthroplasty.** *journal of arthroplasty*
Jethanandani, R. G., Maloney, W. J., Huddleston, J. I., Goodman, S. B., Amanatullah, D. F.
2016; 31 (10): 2282-2285
- **Correlations between macrophage polarizing cytokines, inflammatory mediators, osteoclast activity, and toll-like receptors in tissues around aseptically loosened hip implants.** *Journal of biomedical materials research. Part A*
Jämsen, E., Kouri, V., Ainola, M., Goodman, S. B., Nordström, D. C., Eklund, K. K., Pajarinen, J.
2016
- **The effect of local IL-4 delivery or CCL2 blockade on implant fixation and bone structural properties in a mouse model of wear particle induced osteolysis.** *Journal of biomedical materials research. Part A*
Sato, T., Pajarinen, J., Behn, A., Jiang, X., Lin, T., Loi, F., Yao, Z., Egashira, K., Yang, F., Goodman, S. B.
2016; 104 (9): 2255-2262
- **Obesity is Associated With Early Total Hip Revision for Aseptic Loosening** *JOURNAL OF ARTHROPLASTY*
Electricwala, A. J., Narkbunnam, R., Huddleston, J. I., Maloney, W. J., Goodman, S. B., Amanatullah, D. F.
2016; 31 (9): S217-S220
- **The effect of SDF-1 on low dose BMP-2 mediated bone regeneration by release from heparinized mineralized collagen type I matrix scaffolds in a murine critical size bone defect model** *JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART A*
Zwingenberger, S., Langanke, R., Vater, C., Lee, G., Niederlohm, E., Sensenschmidt, M., Jacobi, A., Bernhardt, R., Muders, M., Rammelt, S., Knaack, S., Gelinsky, M., Guenther, et al
2016; 104 (9): 2126-2134
- **Obesity is Associated With Early Total Hip Revision for Aseptic Loosening.** *journal of arthroplasty*
Electricwala, A. J., Narkbunnam, R., Huddleston, J. I., Maloney, W. J., Goodman, S. B., Amanatullah, D. F.
2016; 31 (9): 217-220

- **The effect of SDF-1a on low dose BMP-2 mediated bone regeneration by release from heparinized mineralized collagen type I matrix scaffolds in a murine critical size bone defect model.** *Journal of biomedical materials research. Part A*
Zwungenberger, S., Langanke, R., Vater, C., Lee, G., Niederlohmann, E., Sensenschmidt, M., Jacobi, A., Bernhardt, R., Muders, M., Rammelt, S., Knaack, S., Gelinsky, M., Günther, et al
2016; 104 (9): 2126-2134
- **NF- κ B decoy oligodeoxynucleotide mitigates wear particle-associated bone loss in the murine continuous infusion model.** *Acta biomaterialia*
Lin, T., Pajarinen, J., Sato, T., Loi, F., Fan, C., Córdova, L. A., Nabeshima, A., Gibon, E., Zhang, R., Yao, Z., Goodman, S. B.
2016; 41: 273-281
- **Cytokines as a predictor of clinical response following hip arthroscopy: minimum 2-year follow-up.** *Journal of hip preservation surgery*
Shapiro, L. M., Safran, M. R., Maloney, W. J., Goodman, S. B., Huddleston, J. I., Bellino, M. J., Scuderi, G. J., Abrams, G. D.
2016; 3 (3): 229-235
- **The biological response to orthopaedic implants for joint replacement: Part I: Metals.** *Journal of biomedical materials research. Part B, Applied biomaterials*
Gibon, E., Amanatullah, D. F., Loi, F., Pajarinen, J., Nabeshima, A., Yao, Z., Hamadouche, M., Goodman, S. B.
2016
- **Aging Affects Bone Marrow Macrophage Polarization: Relevance to Bone Healing.** *Regenerative engineering and translational medicine*
Gibon, E., Loi, F., Córdova, L. A., Pajarinen, J., Lin, T., Lu, L., Nabeshima, A., Yao, Z., Goodman, S. B.
2016; 2 (2): 98-104
- **Inflammation, fracture and bone repair.** *Bone*
Loi, F., Córdova, L. A., Pajarinen, J., Lin, T., Yao, Z., Goodman, S. B.
2016; 86: 119-130
- **The biological response to orthopedic implants for joint replacement. II: Polyethylene, ceramics, PMMA, and the foreign body reaction.** *Journal of biomedical materials research. Part B, Applied biomaterials*
Gibon, E., Córdova, L. A., Lu, L., Lin, T., Yao, Z., Hamadouche, M., Goodman, S. B.
2016
- **Multifunctional coatings to simultaneously promote osseointegration and prevent infection of orthopaedic implants.** *Biomaterials*
Raphel, J., Holodniy, M., Goodman, S. B., Heilshorn, S. C.
2016; 84: 301-314
- **Aging, inflammation, stem cells, and bone healing** *STEM CELL RESEARCH & THERAPY*
Gibon, E., Lu, L., Goodman, S. B.
2016; 7
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