Stanford



Jill Helms

Professor of Surgery (Plastic & Reconstructive Surgery)

Surgery - Plastic & Reconstructive Surgery

CONTACT INFORMATION

- **Administrative Contact**

  Administrative Associate

  Tel 650 497-3962

Bio

BIO

I am a Professor in the Department of Surgery at Stanford School of Medicine, and my research focuses on understanding why healing slows as we age. We've found that many such age-related changes can be traced back to sluggish stem cells, and my group has developed methods to re-activate a patient's own stem cells for therapeutic intervention in a broad range of conditions affecting bone, cartilage, skin, and hair and beyond.

While conducting clinically relevant research is my main objective, it goes hand-in-hand with another goal: I believe that education is one of the most important tools to improving human health, and I aim to use every avenue available to transform the way people think about science and medicine and emphasize its contribution to our daily lives. One particular passion is introducing young people to the power and beauty of science, through a summer internship on campus (see https://plasticsurgery.stanford.edu/research/stars.html). In my new role as Vice-Chair for Diversity and Inclusion, I also have the great, good fortune to work with exceptional colleagues, students, and community partners to tackle some of the most persistent inequities in healthcare.

ACADEMIC APPOINTMENTS

- Professor, Surgery - Plastic & Reconstructive Surgery
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance

ADMINISTRATIVE APPOINTMENTS

- Vice Chair of Diversity and Inclusion, Department of Surgery, (2022- present)

HONORS AND AWARDS

- Crawford Award for Dental Research, University of Minnesota (1983)
- Outstanding Dental Student Research Fellow, University of Minnesota (1983)
- AADR Research Award, University of Minnesota (1983-1984)
- ADA Student Researcher of the Year, Academy of Operative Dentistry (1984)
- Outstanding Dental Student Achievement Award, University of Minnesota (1984)

- Dentist Scientist Award, National Institute of Dental Research (1987-1992)
- Clinical Investigator Award, NICHD (1994-1999)
- New Investigator Research Award, Orthopaedic Research Society (1997)
- Howmedica Research Award, Orthopeadic Research and Education Foundation (1998)
- Associate Editor, Journal of Dental Research (2004-present)
- Vice President, American Society of Craniofacial Genetics (2005-2006)
- Associate Editor, Bone (2005-present)
- Editorial Board, Developmental Dynamics (2005-present)
- Chair, NIDCR Special Emphasis Panel (2007)
- The Bernard G. Sarnat 24th. International Lectureship, UCLA (2007)
- President, American Society of Craniofacial Genetics (2007-2008)
- IADR Distinguished Scientist Award for Craniofacial Biology Research, IADR (2013)
- 2016 Distinguished Scientist Award - Isaac Schour Memorial Award, International Association for Dental Research (IADR) (2016)
- Member, Isaac Schour Memorial Award Subcommittee, International Association of Dental Research (2017-)
- Chair, Craniofacial Biology Award, International Association of Dental Research (2018)
- Symposium co-chair, Optimizing the mechanics and biology of implant osseointegration, American Association for Dental Research (2018)
- Board member, R&D commission, AO Foundation, AO CMF (2018-2020)
- Board member, AO Foundation, AO Incubator and technology transfer (2020-)
- Associate editor, Journal of Dental Research (2021-)
- Associate editor, Journal of Clinical Periodontology (2021-)
- Vice Chair for Diversity and Inclusion, Department of Surgery, Stanford School of Medicine (June, 2022-)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Vice Chair of Diversity and Inclusion, Department of Surgery (2022 - present)
- Associate editor, Journal of Clinical Periodontology (2020 - present)
- Associate editor, Journal of Dental Research (2020 - present)
- Board member, AO Foundation, Innovation board (2020 - present)
- AO CMF R&D board member, AO Foundation (2018 - 2020)
- President, San Francisco Chapter of the AADR (2008 - 2009)
- Chair, Search Committee for Chair of Orthodontics, University of Helsinki, Finland (2008 - 2008)
- President, Society of Craniofacial Genetics (2006 - 2008)
- Primary Reviewer, Origins and properties of dental stem cells, Research Management Group, Medical Research Council, England (2006 - 2006)
- Chair, EU Advisory BoardTooth Morphogenesis and Differentiation (2005 - present)
- Society of Craniofacial Genetics, Vice President (2005 - 2006)
- Member of the Study Section, National Aeronautical and Space Administration (NASA) (2003 - present)
- Research Advisory Board, Orthopedic Research and Education Society (2002 - 2005)
- New Investigator Research Award Committee, Orthopaedic Research Society (1999 - 2000)
- Advisory Board for the Annual Conference on the Growth Plate, NIH (1999 - 1999)
- Research Advisory Board, Shriner's Hospitals (1998 - 2006)
- Scientific Advisory Board, Abstract Selection Committee, Orthopedic Research Society (1998 - 2001)

- Advisory Board for Craniofacial Development, NIH/NIDCR (1997 - present)

PROFESSIONAL EDUCATION

- Certificate, University of Connecticut, Health Sci. Center , Periodontology (1993)
- Ph.D., University of Connecticut, Health Sci. Center , Biomed Sciences (1993)
- D.D.S., University of Minnesota, Minneapolis, MN , Dentistry (1986)
- G.H.D., University of Minnesota, Minneapolis, MN , Dental Hygiene (1981)

PATENTS

- Jill Helms. "United States Patent 9,301,980 Ex-vivo use of WNT3A therapeutic", Leland Stanford Junior University
- Jill Helms. "United States Patent 14/333,220. Enhancement of Osteogenic Potential of Bone Grafts", The Board of Trustees of the Leland Stanford Junior University, Oct 2, 2014
- Jill Helms. "United States Patent 61/885,827 WNT Compositions and Methods for Purification", The Board of Trustees of the Leland Stanford Junior University, Dec 19, 2013

LINKS

- TEDx Stanford, 2014: https://tedx.stanford.edu/2014/jill-helms
- TEDMED Stanford, San Francisco, 2014: http://youtu.be/9G1eIxIDpyM
- The Evolution of Beauty, Stanford+Connects, 2014: https://youtu.be/WpK_FRXDRrc
- Aging Is Not Inevitable: Are Stem Cells the Fountain of Youth?, Stanford Health Matters, 2016: https://www.youtube.com/watch?v=ZPNFQkzMdo4
- In Pursuit of a Perfect Face, Stanford+Connects, 2016: https://stanfordconnects.stanford.edu/watch/pursuit-perfect-face

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Helms is a Professor in the Department of Surgery at Stanford University.

My research program in the field of regeneration medicine is inspired by collaborations with experts in bioengineering, materials science, physics, and with colleagues in the life sciences. We focus on developing strategies to improve tissue healing through the re-activation of autologous stem cells. Adult stem cells are critical regenerative precursors that, when activated, control tissue regeneration. We are developing clinically relevant methods to drive the self-renewal and proliferation of adult stem cells in the context of wound repair.

We are especially interested in age-related changes in tissue healing; as we get older our ability to heal injuries slows down and many of these changes can be traced back to sluggish stem cells. We believe that the ability to re-activate a patient’s own stem cells presents a unique opportunity for therapeutic intervention in a broad range of conditions affecting bone, cartilage, skin, and hair.

I have a successful track record for assembling and managing multi-investigator projects and I have obtained funding from both federal and non-federal sources including the NIH and the California Institute for Regenerative Medicine (CIRM). Work on our laboratory has led to a number of patent filings, which emphasizes the translational nature of our work.

Conducting clinically relevant research is my main objective, but this goes hand-in-hand with another goal: I believe that education is one of the most important tools to improving human health. I aim to use every avenue available to transform the way people think about science and medicine, and emphasize its contribution to their daily lives. I’ve participated in TV programming (BBC, Discovery Channel, Animal Planet), taught a variety of undergraduate courses, continuing studies courses, and now a MOOC, all in an attempt in show people how science positively impacts our lives. In the

end, I believe it falls to scientists to provide tangible examples- to students of all ages- of the value of research. By actively engaging the community (from middle school students to retirement community residents) in the benefits of scientific exploration, I believe we create a shared vision of how basic science research profits all of us.

I am also an enthusiastic mentor for programs that introduce young men and women from under-represented ethnicities to the Sciences. Through teamwork, lectures, and most importantly, hands-on experiences with real-world problems, students get a taste of what a career in biomedical research entails. Through these means I believe we can have a substantial impact on the makeup of future scientists and clinicians, and make real contributions towards the advancement of health care to underserved segments of our population.

Finally, I am deeply invested in advocating on behalf of individuals who have conditions and injuries affecting their appearance. Facial differences, especially in our young patients, can deeply affect an individuals' self-perception and their acceptance in our beauty-conscious society. As an ally to those with facial differences, I actively support the goals of charitable organizations such as Changing Faces (UK), to educate the public about people with facial disabilities. I hold this responsibility seriously, and approach it with a deep respect for the lives and choices of people with disabilities.

Teaching

COURSES

2026-27

- Becoming whatever you want to be: lessons learned from a stem cell: SURG 52Q (Spr)
- Service Learning Practicum: EDUC 98SI (Win)

2025-26

- Becoming whatever you want to be: lessons learned from a stem cell: SURG 52Q (Win)

2024-25

- Becoming whatever you want to be: lessons learned from a stem cell: SURG 52Q (Win)

2023-24

- Becoming whatever you want to be: lessons learned from a stem cell: SURG 52Q (Win)

Publications

PUBLICATIONS

- **Development and Validation of a Reproducible Cross-Species Liver Machine Perfusion Platform in Rats and Mice.** *ASAIO journal (American Society for Artificial Internal Organs : 1992)*
  Cywińska, G. N., Badshah, J. S., Han, S., Lee, R. M., Tajima, T., Emengo, P., Aellos, F., Liu, B., Sleasman, J., Zhou, G. P., Reitsma, A., Dunn, J. C., Melcher, et al
  2026
- **WNT Signaling Modifies Barrier Functions of Junctional and Pocket Epithelium.** *Journal of dental research*
  Aellos, F., Chang, E., Jeong, E., Liu, B., Yuan, X., Nazari, R., Hermans, F., Torabi, M. M., Ochweri, P. C., Cuevas, P., Rao, S., Alccayhuaman, K. A., Sandoval, et al
  2026: 220345261458716
- **Epithelial Rests of Malassez Form a Wnt-Dependent Mechanoresponsive Network.** *Journal of dental research*
  Liu, B., Lambrichts, I., Chang, E., Torabi, M. M., Aellos, F., Ochweri, P. C., Evens, I., James, M. R., Hakeam, M. A., Huang, C., Brunski, J. B., Hermans, F., Helms, et al
  2026: 220345261455868
- **Soft-Tissue Integration of Dental Implants: Formation, Maintenance, and Relevance for Peri-Implant Health** *JOURNAL OF PERIODONTAL RESEARCH*

Aellos, F., Clavelier, A., Liu, B., Wan, A., Salvi, G. E., Romandini, M., Helms, J. A.
2026

- **Injury-Activated ERMs Undergo EMT and May Contribute to Periodontal Repair.** *Journal of dental research*
  Liu, B., Hermans, F., Aellos, F., Dworan, J., Chang, E., Clavelier, A., Ranjith, N., Millan, S. A., Torabi, M. M., Lambrichts, I., Helms, J. A.
  2025: 220345251397858

- **BMP/WNT-Dependent Mechanisms of Junctional Epithelium Turnover.** *Journal of dental research*
  Liu, B., Cao, F., Zheng, S., Yuan, X., Mandalapu, N., Park, J. S., Sugihara, M. O., Mishina, Y., Helms, J. A.
  2025: 220345251364162

- **Multiscale, interspecies evaluation of parameters affecting alveolar bone repair.** *Journal of periodontology*
  Ticha, P., Joshi, A., Dworan, J. S., Armaro, M., Arioka, M., Xu, Q., Pilawski, I., Liu, Y., Chen, C. H., Pei, X., Tulu, U. S., Traxler, H., Erdogan, et al
  2025

- **The Junctional Epithelium Attachment Is Regulated by Wnt Signaling.** *Journal of dental research*
  Aellos, F., Cuevas, P. L., Harder, K. G., Grauer, J. A., Ramos, A., Liu, B., Helms, J. A.
  2025: 220345251336168

- **Wnt1's Differential Effects on Craniofacial Bone and Tooth Development.** *Journal of dental research*
  Mahmoud, R., Simon, A., Luther, J., Pothe, J., Du, Y., Nottmeier, C., Okine, E., Knauth, S., Lopez, M. G., Bockamp, E., Krivanek, J., LeBlanc, A., Helms, et al
  2025: 220345251336191

- **The effect of Rsk2 on TNFα-mediated bone loss in the TMJ and craniofacial skeleton.** *BMC oral health*
  Georgi, G. M., Bachmann, F., Luther, J., Derer, A., Heimel, P., Tangl, S., Kahl-Nieke, B., LeBlanc, A., Helms, J., Schett, G., Hirsch, C., Gruber, R., Amling, et al
  2025; 25 (1): 435

- **5-FU Weakens Defensive Functions of the Junctional Epithelium.** *Journal of periodontal research*
  Aellos, F., Ramos, A., Civit-Balta, A., Grauer, J. A., Cuevas, P. L., Rao, S., Yuan, X., Liu, B., Helms, J. A.
  2025

- **Dynamics of Mucosal Integration of Machined versus Anodized Titanium Implants.** *Journal of dental research*
  Dworan, J., Aellos, F., Grauer, J. A., Fabbri, G., Harder, K. G., Boccardo, S., Cuevas, P. L., Dawid, I., Vicini, M., Helms, J. A.
  2024: 220345241296506

- **Biomechanical Basis for Bone Healing and Osseointegration of Implants in Sinus Grafts.** *Clinical implant dentistry and related research*
  Stacchi, C., Coyac, B. R., Helms, J. A.
  2024

- **Evaluation of Postoperative Outcomes Following Early and Late Palate Repair: A Preclinical Study.** *The Journal of craniofacial surgery*
  Aellos, F., Verma, I., Ly, M., Hoy, M., Quach, T., Rosbander, I., Sandoval, A., Wolvis, E., Turkkahraman, H., Helms, J. A.
  2024

- **Liposome-stabilized WNT3A protein (L-WNT) upregulates adult hepatic stem cells and reduces cell death in liver during cold preservation**
  Kirchner, V. A., Liu, B., Aellos, F., Ramos, A. J., Melcher, M., Badshah, J., Helms, J. A.
  LIPPINCOTT WILLIAMS & WILKINS.2024: 23-24

- **Upregulation of the senescence genes SFN and CDC6 correlates with poor survival in Stage II Hepatocellular Carcinoma**
  Badshah, J., Subramanian, S., Melcher, M., Sasaki, K., Visser, B., Delitto, D., Helms, J. A., Pruett, T. L., Niedernhofer, L. J., Kirchner, V. A.
  LIPPINCOTT WILLIAMS & WILKINS.2024: 104-105

- **A critical analysis on quality-of-life in women with visible facial disfigurements.** *Special care in dentistry : official publication of the American Association of Hospital Dentists, the Academy of Dentistry for the Handicapped, and the American Society for Geriatric Dentistry*
  Okine, E., Helms, J. A., Luhrmann, T.
  2024

- **Dynamic analyses of a soft tissue-implant interface: Biological responses to immediate versus delayed dental implants.** *Journal of clinical periodontology*
  Aellos, F., Grauer, J. A., Harder, K. G., Dworan, J. S., Fabbri, G., Cuevas, P. L., Yuan, X., Liu, B., Brunski, J. B., Helms, J. A.

2024

- **The Effect of Osteocyte-Derived RANKL on Bone Graft Remodeling**
  Feher, B., Kampleitner, C., Heimel, P., Tangl, S., Helms, J., Kuchler, U., Gruber, R.
  OXFORD UNIV PRESS.2023: 53-54
- **The effect of osteocyte-derived RANKL on bone graft remodeling: An in vivo experimental study.** *Clinical oral implants research*
  Feher, B., Kampleitner, C., Heimel, P., Tangl, S., Helms, J. A., Kuchler, U., Gruber, R.
  2023
- **Linking the Mechanics of Chewing to Biology of the Junctional Epithelium.** *Journal of dental research*
  Yuan, X., Liu, B., Cuevas, P., Brunski, J., Aellos, F., Petersen, J., Koehne, T., Bröer, S., Grüber, R., LeBlanc, A., Zhang, X., Xu, Q., Helms, et al
  2023: 220345231185288
- **Mechanical-induced bone remodeling does not depend on Piezo1 in dentoalveolar hard tissue.** *Scientific reports*
  Nottmeier, C., Lavicky, J., Gonzalez Lopez, M., Knauth, S., Kahl-Nieke, B., Amling, M., Schinke, T., Helms, J., Krivanek, J., Koehne, T., Petersen, J.
  2023; 13 (1): 9563
- **Wnt/beta-Catenin Signaling in Craniomaxillofacial Osteocytes.** *Current osteoporosis reports*
  Cuevas, P. L., Aellos, F., Dawid, I. M., Helms, J. A.
  2023
- **Corrigendum to "Hormone sensitive lipase ablation promotes bone regeneration" [Biochim. Biophys. Acta Mol. Basis Dis. Volume 1868, Issue 9, 1 September 2022, 166449].** *Biochimica et biophysica acta. Molecular basis of disease*
  Shen, W. J., Still, C., Han, L., Yang, P., Chen, J., Wosczyna, M., Rando, T. A., Salmon, B. J., Perez, K. C., Li, J., Cuevas, P. L., Liu, B., Azhar, et al
  2022; 1868 (11): 166506
- **A WNT protein therapeutic accelerates consolidation of a bone graft substitute in a pre-clinical sinus augmentation model.** *Journal of clinical periodontology*
  Coyac, B. R., Wolf, B. J., Bahat, D. J., Arioka, M., Brunski, J. B., Helms, J. A.
  2022
- **Hormone sensitive lipase ablation promotes bone regeneration.** *Biochimica et biophysica acta. Molecular basis of disease*
  Shen, W. J., Chris Still, I. I., Han, L., Yang, P., Chen, J., Wosczyna, M., Salmon, B. J., Perez, K. C., Li, J., Cuevas, P. L., Liu, B., Azhar, S., Helms, et al
  2022: 166449
- **Experiential factors affecting the empathy of students in their pre-clinical year(s) of 21 universities.** *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*
  Vigoda, J., Adeniyi, A., Tudor, L., Brassett, C., McWatt, S., Sagoo, M. G., Wingate, R., Chien, C., Traxler, H., Waschke, J., Vielmuth, F., Sigmund, A., Sakurai, et al
  2022; 36 Suppl 1
- **Cultural competency preparedness in medical and health professions students - a collaborative study involving anatomy departments at 20 international universities.** *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*
  Wu, A., Patel, R., Brassett, C., McWatt, S., Sagoo, M. G., Wingate, R., Chien, C., Traxler, H., Waschke, J., Vielmuth, F., Sigmund, A., Sakurai, T., Yamada, et al
  2022; 36 Suppl 1
- **An Osteotomy Tool That Preserves Bone Viability: Evaluation in Preclinical and Clinical Settings.** *Journal of clinical medicine*
  Bahat, O., Yin, X., Holst, S., Zabalegui, I., Berroeta, E., Perez, J., Wohrle, P., Sorgel, N., Brunski, J., Helms, J. A.
  2022; 11 (9)
- **Multiscale analysis of craniomaxillofacial bone repair: A preclinical mini pig study.** *Journal of periodontology*
  Ticha, P., Pilawski, I., Helms, J. A.
  2022
- **Wnt/beta-catenin Signaling Controls Maxillofacial Hyperostosis.** *Journal of dental research*
  Chen, J., Cuevas, P. L., Dworan, J. S., Dawid, I., Turkkahraman, H., Tran, K., Delgado-Calle, J., Bellido, T., Gorski, J. P., Liu, B., Brunski, J. B., Helms, J. A.
  1800: 220345211067705

- **Clinically relevant preclinical animal models for testing novel cranio-maxillofacial bone 3D-printed biomaterials.** *Clinical and translational medicine*
  Hatt, L. P., Thompson, K., Helms, J. A., Stoddart, M. J., Armiento, A. R.
  2022; 12 (2): e690
- **Effects of masticatory loading on bone remodeling around teeth vs. implants: insights from a preclinical model.** *Clinical oral implants research*
  Tian, Y., Sadowsky, S. J., Brunski, J. B., Yuan, X., Helms, J. A.
  2022
- **Targeting Notch inhibitors to the myeloma bone marrow niche decreases tumor growth and bone destruction without gut toxicity.** *Cancer research*
  Sabol, H. M., Ferrari, A. J., Adhikari, M., Amorim, T., McAndrews, K., Anderson, J., Vigolo, M., Lehal, R., Cregor, M., Khan, S., Cuevas, P. L., Helms, J. A., Kurihara, et al
  2021
- **Accelerating Socket Repair via WNT3A Curtails Alveolar Ridge Resorption.** *Journal of dental research*
  Arioka, M., Dawid, I. M., Cuevas, P. L., Coyac, B. R., Leahy, B., Wang, L., Yuan, X., Li, Z., Zhang, X., Liu, B., Helms, J. A.
  2021: 220345211019922
- **Biology of sinus floor augmentation with an autograft vs. a bone graft substitute in a preclinical in vivo experimental model.** *Clinical oral implants research*
  Coyac, B. R., Wu, M., Bahat, D. J., Wolf, B. J., Helms, J. A.
  2021
- **Comparative analyses of the soft tissue interfaces around teeth and implants: Insights from a pre-clinical implant model.** *Journal of clinical periodontology*
  Yuan, X., Pei, X., Chen, J., Zhao, Y., Brunski, J. B., Helms, J. A.
  2021
- **Drill Hole Models to Investigate Bone Repair.** *Methods in molecular biology (Clifton, N.J.)*
  Li, Z., Helms, J. A.
  2021; 2221: 193–204
- **A novel cryo-embedding method for in-depth analysis of craniofacial mini pig bone specimens.** *Scientific reports*
  Ticha, P., Pilawski, I., Yuan, X., Pan, J., Tulu, U. S., Coyac, B. R., Hoffmann, W., Helms, J. A.
  2020; 10 (1): 19510
- **Molecular Basis for Craniofacial Phenotypes Caused by Sclerostin Deletion.** *Journal of dental research*
  Chen, J., Yuan, X., Pilawski, I., Liu, X., Delgado-Calle, J., Bellido, T., Turkkahraman, H., Helms, J. A.
  2020: 22034520963584
- **Pro-osteogenic Effects of WNT in a Mouse Model of Bone Formation Around Femoral Implants.** *Calcified tissue international*
  Li, Z., Yuan, X., Arioka, M., Bahat, D., Sun, Q., Chen, J., Helms, J. A.
  2020
- **Formation and regeneration of a Wnt-responsive junctional epithelium.** *Journal of clinical periodontology*
  Yuan, X., Chen, J., Van Brunt, L. A., Grauer, J., Xu, Q., Pei, X., Wang, L., Zhao, Y., Helms, J. A.
  2020
- **The Junctional Epithelium Is Maintained by a Stem Cell Population.** *Journal of dental research*
  Yuan, X., Chen, J., Gauer, J., Xu, Q., Van Brunt, L. A., Helms, J. A.
  2020: 22034520960125
- **Mechano-adaptive Responses of Alveolar Bone to Implant Hyper-loading in a pre-clinical in vivo model.** *Clinical oral implants research*
  Tian, Y., Li, Z., Chen, J., Yuan, X., Sadowsky, S. J., Coyac, B. R., Brunski, J. B., Helms, J. A.
  2020
- **Bone formation around unstable implants is enhanced by a WNT protein therapeutic in a preclinical in vivo model.** *Clinical oral implants research*
  Coyac, B. R., Leahy, B., Li, Z., Salvi, G., Yin, X., Brunski, J. B., Helms, J. A.

2020

- **Interspecies Comparison of Alveolar Bone Biology, Part I: Morphology and Physiology of Pristine Bone.** *JDR clinical and translational research*
  Pilawski, I., Tulu, U. S., Ticha, P., Schupbach, P., Traxler, H., Xu, Q., Pan, J., Coyac, B. R., Yuan, X., Tian, Y., Liu, Y., Chen, J., Erdogan, et al
  2020: 2380084420936979
- **Interspecies comparison of alveolar bone biology: Tooth extraction socket healing in mini pigs and mice.** *Journal of periodontology*
  Pan, J., Pilawski, I., Yuan, X., Arioka, M., Ticha, P., Tian, Y., Helms, J. A.
  2020
- **Effects of condensation and compressive strain on implant primary stability A longitudinal, in vivo, multiscale study in mice** *BONE & JOINT RESEARCH*
  Li, Z., Arioka, M., Liu, Y., Aghvami, M., Tulu, S., Brunski, J. B., Helms, J. A.
  2020; 9 (2): 60–70
- **Bioactivating a bone substitute accelerates graft incorporation in a murine model of vertical ridge augmentation.** *Dental materials : official publication of the Academy of Dental Materials*
  Chen, J. n., Yuan, X. n., Li, Z. n., Bahat, D. J., Helms, J. A.
  2020
- **A novel system exploits bone debris for implant osseointegration.** *Journal of periodontology*
  Coyac, B. R., Salvi, G. n., Leahy, B. n., Li, Z. n., Salmon, B. n., Hoffmann, W. n., Helms, J. A.
  2020
- **Root resorption and ensuing cementum repair by Wnt/β-catenin dependent mechanism.** *American journal of orthodontics and dentofacial orthopedics : official publication of the American Association of Orthodontists, its constituent societies, and the American Board of Orthodontics*
  Turkkahraman, H. n., Yuan, X. n., Salmon, B. n., Chen, C. H., Brunski, J. B., Helms, J. A.
  2020
- **A novel system exploits bone debris for implant osseointegration.** *Journal of periodontology*
  Coyac, B. R., Salvi, G. n., Leahy, B. n., Li, Z. n., Salmon, B. n., Hoffmann, W. n., Helms, J. A.
  2020
- **Wnt responsive progenitor cells contribute to osseointegration of implants in lone bone**
  Li, Z., Yuan, X., Helms, J.
  WILEY.2019: 86–87
- **Wnt responsive progenitor cells contribute to osseointegration of implants in lone bone.**
  Li, Z., Yuan, X., Helms, J.
  WILEY.2019: 86–87
- **Improving intraoperative storage conditions for autologous bone grafts: an experimental investigation in mice.** *Journal of tissue engineering and regenerative medicine*
  Sun, Q., Li, Z., Liu, B., Yuan, X., Guo, S., Helms, J.
  2019
- **Wnt-Responsive Stem Cell Fates in the Oral Mucosa.** *iScience*
  Yuan, X., Xu, Q., Zhang, X., Van Brunt, L. A., Ticha, P., Helms, J. A.
  2019; 21: 84–94
- **A preclinical model links osseo-densification due to misfit and osseo-destruction due to stress/strain.** *Clinical oral implants research*
  Coyac, B. R., Leahy, B., Salvi, G., Hoffmann, W., Brunski, J. B., Helms, J. A.
  2019
- **A Correlation between Wnt/Beta-catenin Signaling and the Rate of Dentin Secretion.** *Journal of endodontics*
  Zhao, Y., Yuan, X., Bellido, T., Helms, J. A.
  2019
- **WNT3A accelerates delayed alveolar bone repair in ovariectomized mice.** *Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*

Liu, Y., Li, Z., Arioka, M., Wang, L., Bao, C., Helms, J. A.
2019

- **A novel hypothesis based on clinical, radiological, and histological data to explain the dentinogenesis imperfecta type II phenotype.** *Connective tissue research*
  Turkkahraman, H., Galindo, F., Tulu, U. S., Helms, J. A.
  2019: 1–11

- **Mechanoadaptive Responses in the Periodontium Are Coordinated by Wnt** *JOURNAL OF DENTAL RESEARCH*
  Xu, Q., Yuan, X., Zhang, X., Chen, J., Shi, Y., Brunski, J. B., Helms, J. A.
  2019; 98 (6): 689–97

- **Mechanoadaptive Responses in the Periodontium Are Coordinated by Wnt.** *Journal of dental research*
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