



1

Allbritton-King JD, García-Cardena G.

**Endothelial cell dysfunction in cardiac disease: Driver or consequence?**

Front Cell Dev Biol. 2023 Oct 25;11:1278166.

<https://doi.org/10.3389/fcell.2023.1278166>

*Journal Impact Factor:* 5.5

2

Al-Turki TM, Maranon DG, Nelson CB, Lewis AM, Luxton JJ, Taylor LE, Altina N, Wu F, Du H, Kim J, Damle N, Overbey E, Meydan C, Grigorev K, Winer DA, Furman D, Mason CE, Bailey SM.

**Telomeric RNA (TERRA) increases in response to spaceflight and high-altitude climbing.**

Commun Biol. 2024 Jun 11;7:698.

<https://doi.org/10.1038/s42003-024-06014-x>

*Journal Impact Factor:* 5.9

3

An R, Blackwell VK, Harandi B, Gibbons AC, Siu O, Irby I, Rees A, Cornejal N, Sattler KM, Sheng T, Syracuse NC, Loftus D, Santa Maria SR, Cekanaviciute E, Reinsch SS, Ray HE, Paul AM.

**Influence of the spaceflight environment on macrophage lineages.**

npj Microgravity. 2024 Jun 11;10:63. Review.

<https://doi.org/10.1038/s41526-023-00293-0>

*Journal Impact Factor:* 5.1

4

Andrade MR, Azeez TA, Montgomery MM, Caldwell JT, Park H, Kwok AT, Borg AM, Narayanan SA, Willey JS, Delp MD, La Favor JD.

**Neurovascular dysfunction associated with erectile dysfunction persists after long-term recovery from simulations of weightlessness and deep space irradiation.**

Faseb j. 2023 Dec;37(12):e23246.

<https://doi.org/10.1096/fj.202300506RR>

*Journal Impact Factor:* 4.8

5

Bakshi A, Choi WG, Kim SH, Gilroy S.

**The vacuolar  $\text{Ca}^{2+}$  transporter CATION EXCHANGER 2 regulates cytosolic calcium homeostasis, hypoxic signaling, and response to flooding in *Arabidopsis thaliana*.**

New Phytol. 2023 Dec;240(5):1830-1847.

<https://doi.org/10.1111/nph.19274>

*Journal Impact Factor:* 9.4

6

Barcenilla BB, Kundel I, Hall E, Hilty N, Ulianich P, Cook J, Turley J, Yerram M, Min J-H, Castillo-González C, Shippen DE.

**Telomere dynamics and oxidative stress in Arabidopsis grown in lunar regolith simulant.**

Front Plant Sci. 2024 Feb 15;15:1351613.

<https://doi.org/10.3389/fpls.2024.1351613>

*Journal Impact Factor:* 5.6

7

Barcenilla BB, Meyers AD, Castillo-González C, Young P, Min JH, Song J, Phadke C, Land E, Canaday E, Perera IY, Bailey SM, Aquilano R, Wyatt SE, Shippen DE.

**Arabidopsis telomerase takes off by uncoupling enzyme activity from telomere length maintenance in space.**

Nat Commun. 2023 Nov 29;14:7854.

<https://doi.org/10.1038/s41467-023-41510-4>

*Journal Impact Factor:* 16.6

8

Biancotti JC, Espinosa-Jeffrey A.

**Metabolomic profiling of the secretome from human neural stem cells flown into space.**

Bioengineering (Basel). 2023 Dec 22;11(1):11.

<https://doi.org/10.3390/bioengineering11010011>

*Journal Impact Factor:* 4.6

9

Boles HO, Poulet L, Johnson CM, Torres JJ, Koss LL, Spencer LE, Massa GD.

**Design, build, and testing of hardware to safely harvest microgreens in microgravity.**

Gravit Space Res. 2023 Oct 30;11(1):1-14.

<https://doi.org/10.2478/gsr-2023-0001>

*Journal Impact Factor:* Not available for this journal

10

Bongrand C, Foster JS.

**Modeled microgravity impacts *Vibrio fischeri* population structure in a mutualistic association with an animal host.**

Environ Microbiol. 2023 Oct 12.

<https://doi.org/10.1111/1462-2920.16522>

*Journal Impact Factor:* 5.1

11

Borg J, Loy C, Kim J, Buhagiar A, Chin C, Damle N, De Vlaminck I, Felice A, Liu T, Matei I, Meydan C, Muratani M, Mzava O, Overbey E, Ryon KA, Smith SM, Tierney BT, Trudel G, Zwart SR, Beheshti A, Mason CE, Borg J.

**Spatiotemporal expression and control of haemoglobin in space.**

Nat Commun. 2024 Jun 11;15:4927.

<https://doi.org/10.1038/s41467-024-49289-8>

*Journal Impact Factor:* 16.6

12

Bunchek JM, Hummerick ME, Spencer LE, Romeyn MW, Young M, Morrow RC, Mitchell CA, Douglas GL, Wheeler RM, Massa GD.

**Pick-and-eat space crop production flight testing on the International Space Station.**

J Plant Interact. 2024 Jan 18;19(1):2292220.

<https://doi.org/10.1080/17429145.2023.2292220>

*Journal Impact Factor:* 3.2

13

Burke M, Wong K, Talyansky Y, Mhatre SD, Mitchell C, Juran CM, Olson M, Iyer J, Puukila S, Tahimic CGT, Christenson LK, Lowe M, Rubinstein L, Shirazi-Fard Y, Sowa MB, Alwood JS, Ronca AE, Paul AM.

**Sexual dimorphism during integrative endocrine and immune responses to ionizing radiation in mice.**

Sci Rep. 2024 Feb 26;14:7334.

<https://doi.org/10.1038/s41598-023-33629-7>

*Journal Impact Factor:* 4.6

14

Camera A, Tabetah M, Castañeda V, Kim J, Galsinh AS, Haro-Vinueza A, Salinas I, Seylani A, Arif S, Das S, Mori MA, Carano A, de Oliveira LC, Muratani M, Barker R, Zaksas V, Goel C, Dimokidis E, Taylor DM, Jeong J, Overbey E, Meydan C, Porterfield DM, Díaz JE, Caicedo A, Schisler JC, Laiakis EC, Mason CE, Kim MS, Karouia F, Szewczyk NJ, Beheshti A.

**Aging and putative frailty biomarkers are altered by spaceflight.**

Sci Rep. 2024 Jun 11;14:13098.

<https://doi.org/10.1038/s41598-024-57948-5>

*Journal Impact Factor:* 4.6

15

Cannon AE, Vanegas DC, Sabharwal T, Salmi ML, Wang J, Clark G, McLamore ES, Roux SJ.

**Polarized distribution of extracellular nucleotides promotes gravity-directed polarization of development in spores of *Ceratopteris richardii*.**

Front Plant Sci. 2023 Oct 3;14:1265458.

<https://doi.org/10.3389/fpls.2023.1265458>

*Journal Impact Factor:* 5.6

16

Cao X, Thomas D, Whitcomb LA, Wang M, Chatterjee A, Chicco AJ, Weil MM, Wu JC.

**Modeling ionizing radiation-induced cardiovascular dysfunction with human iPSC-derived engineered heart tissues.**

J Mol Cell Cardiol. 2024 Mar;188:105-7.

<https://doi.org/10.1016/j.yjmcc.2023.11.012>

*Journal Impact Factor:* 5.1

17

Carpo N, Tran V, Biancotti JC, Cepeda C, Espinosa-Jeffrey A.  
**Spaceflight enhances stress pathways in human neural stem cells.**  
Biomolecules. 2024 Jan 3;14(1):65.

<https://pubmed.ncbi.nlm.nih.gov/38254665>

*Journal Impact Factor:* 5.5

18

Caudal A, Snyder MP, Wu JC.

**Harnessing human genetics and stem cells for precision cardiovascular medicine.**  
Cell Genom. 2024 Feb 14;4(2):100445. Review.

<https://doi.org/10.1016/j.xgen.2023.100445>

*Journal Impact Factor:* 2.5

19

Chou J, Ramroop JR, Saravia-Butler AM, Wey B, Lera MP, Torres ML, Heavner ME, Iyer J, Mhatre SD, Bhattacharya S, Govind S.

***Drosophila* parasitoids go to space: Unexpected effects of spaceflight on hosts and their parasitoids.**

iScience. 2024 Jan 19;27(1):108759.

<https://doi.org/10.1016/j.isci.2023.108759>

*Journal Impact Factor:* 5.8

20

Coker ZN, Troyanova-Wood M, Steelman ZA, Ibey BL, Bixler JN, Scully MO, Yakovlev VV.

**Brillouin microscopy monitors rapid responses in subcellular compartments.**

Photonix. 2024 Apr 10;5(1):9.

<https://doi.org/10.1186/s43074-024-00123-w>

*Journal Impact Factor:* 16.5

21

Cope H, Elsborg J, Demharther S, McDonald JT, Wernecke C, Parthasarathy H, Unadkat H, Chatrathi M, Claudio J, Reinsch S, Avci P, Zwart SR, Smith SM, Heer M, Muratani M, Meydan C, Overbey E, Kim J, Chin CR, Park J, Schisler JC, Mason CE, Szewczyk NJ, Willis CRG, Salam A, Beheshti A.

**Transcriptomics analysis reveals molecular alterations underpinning spaceflight dermatology.**

Commun Med (Lond). 2024 Jun 11;4(1):106.

<https://doi.org/10.1038/s43856-024-00532-9>

*Journal Impact Factor:* Not available for this journal

22

Darby E, Armstrong S, Walters KJ.

**Bioregenerative dietary supplementation in space: *Brassica rapa* var. *nipposinica* and other *Brassica* cultivars.**

Life Sci Space Res. 2024 Aug;42:140-7.

<https://doi.org/10.1016/j.lssr.2023.12.002>

*Journal Impact Factor:* 2.5

23

Deo KA, Murali A, Tronolone JJ, Mandrona C, Lee HP, Rajput S, Hargett S, Selahi A, Sun Y, Alge D, Jain A, Gaharwar AK.

**Granular biphasic colloidal hydrogels for 3D bioprinting.**

Adv Healthc Mater. 2024 May 15;13(25):2303810.

<https://doi.org/10.1002/adhm.202303810>

Journal Impact Factor: 10

24

Diao X, Haveman N, Califar B, Dong X, Prentice B, Paul A-L, Ferl RJ.

**Spaceflight impacts xyloglucan oligosaccharide abundance in *Arabidopsis thaliana* root cell walls.**

Life Sci Space Res. 2024 May;41:110-8.

<https://doi.org/10.1016/j.lssr.2024.02.004>

Journal Impact Factor: 2.5

25

Dixit AR, Meyers AD, Richardson B, Richards JT, Richards SE, Neelam S, Levine HG, Cameron MJ, Zhang Y.

**Simulated galactic cosmic ray exposure activates dose-dependent DNA repair response and down regulates glucosinolate pathways in *Arabidopsis* seedlings.**

Front Plant Sci. 2023 Dec14;14:1284529.

<https://doi.org/10.3389/fpls.2023.1284529>

Journal Impact Factor: 5.6

26

Duscher AA, Vroom MM, Foster JS.

**Impact of modeled microgravity stress on innate immunity in a beneficial animal-microbe symbiosis.**

Sci Rep. 2024 Feb 5;14:2912.

<https://doi.org/10.1038/s41598-024-53477-3>

Journal Impact Factor: 4.996

27

Flores P, Luo J, Mueller DW, Muecklich F, Zea L.

**Space biofilms – An overview of the morphology of *Pseudomonas aeruginosa* biofilms grown on silicone and cellulose membranes onboard the International Space Station.**

Biofilm. 2024 June;7:100182.

<https://doi.org/10.1016/j.biofilm.2024.100182>

Journal Impact Factor: 6.8

28

Fois M, Diaz-Artiles A, Zaman SY, Ridolfi L, Scarsoglio S.

**Linking cerebral hemodynamics and ocular microgravity-induced alterations through an in silico-in vivo head-down tilt framework.**

npj Microgravity. 2024 Feb 27;10:22.

<https://doi.org/10.1038/s41526-024-00366-8>

*Journal Impact Factor:* 5.1

29

Garcia-Medina JS, Sienkiewicz K, Narayanan SA, Overbey EG, Grigorev K, Ryon KA, Burke M, Proszynski J, Tierney B, Schmidt CM, Mencia-Trinchant NK, R., Klotz R, Ortiz V, Foox J, Damle N, Najjar D, Matei I, Chan I, Cruchaga C, Shakib L, Kim J, Lucaci A, Loy C, Mzava O, De Vlaminc I, Singaraju A, Taylor LE, Schmidt JC, Schmidt MA, Blease K, Moreno JB, A., Boddicker A, Zhao J, Lajoie B, Altomare AK, S., Kruglyak S, Levy S, Yu M, Hassane DC, Bailey SM, Bolton K, Mateus J, Mason CE.

**Genome and clonal hematopoiesis stability contrasts with immune, cfDNA, mitochondrial, and telomere length changes during short duration spaceflight.**

Precision Clinical Medicine. 2024 Apr 8;7(1):pbac007.

<https://doi.org/10.1093/pcmedi/pbac007>

*Journal Impact Factor:* 5.3

30

Ghosh LD, Jain A.

**The prospects of microphysiological systems in modeling platelet pathophysiology in cancer.**

Platelets. 2023 Dec 31;34(1):2247489. Review.

<https://doi.org/10.1080/09537104.2023.2247489>

*Journal Impact Factor:* 3.3

31

Ghosh LD, Mathur T, Tronolone JJ, Chuong A, Rangel K, Corvigno S, Sood AK, Jain A.

**Angiogenesis-enabled human ovarian tumor microenvironment-chip evaluates pathophysiology of platelets in microcirculation.**

Adv Healthc Mater. 2024 Mar 30;13(19):304263.

<https://doi.org/10.1002/adhm.202304263>

*Journal Impact Factor:* 10

32

Gottel NR, Hill MS, Neal MJ, Allard SM, Zengler K, Gilbert JA.

**Biocontrol in built environments to reduce pathogen exposure and infection risk.**

The ISME Journal. 2024 Jan 10;18(1):wrad024.

<https://doi.org/10.1093/ismejo/wrad024>

*Journal Impact Factor:* 11.0

33

Grigorev K, Nelson TM, Overbey EG, Houerbi N, Kim J, Najjar D, Damle N, Afshin EE, Ryon KA, Thierry-Mieg J, Thierry-Mieg D, Melnick AM, Mateus J, Mason CE.

**Direct RNA sequencing of astronaut blood reveals spaceflight-associated m6A increases and hematopoietic transcriptional responses.**

The ISME Journal. 2024 Jan 10.

<https://doi.org/10.1038/s41467-024-48929-3>

*Journal Impact Factor:* 16.6

34

Gupta P, Elser J, Hooks E, D'Eustachio P, Jaiswal P, Naithani S.

**Plant reactome knowledgebase: Empowering plant pathway exploration and OMICS data analysis.**

Nucleic Acids Res. 2023 Nov 20.

<https://doi.org/10.1093/nar/gkad1052>

*Journal Impact Factor:* 14.9

35

Hagan ML, Tuladhar A, Yu K, Alhamad DW, Bensreti H, Dorn J, Piedra VM, Cantu N, Stokes EG, Blumenthal D, Roberts RL, Balayan V, Bass SM, Dickerson T, Cartelle AL, Montesinos-Cartagena M, Awad ME, Castro AA, Garland T Jr, Cooley MA, Johnson M, Hamrick MW, McNeil PL, McGee-Lawrence ME.

**Osteocyte Sptbn1 deficiency alters cell survival and mechanotransduction following formation of plasma membrane disruptions (PMD) from mechanical loading.**

Calcif Tissue Int. 2024 Sep 14.

<https://doi.org/10.1007/s00223-024-01285-2>

*Journal Impact Factor:* 3.3

36

Hasenstein KH, John SP, Vandenbrink JP.

**Assessing radish health during space cultivation by gene transcription.**

Plants (Basel). 2023 Sep 30;12(19):3458.

<https://doi.org/10.3390/plants12193458>

*Journal Impact Factor:* 4.5

On the cover: “Cover Story: The Advanced Plant Habitat experiment 2 grew radish plants on the International Space Station (ISS) twice for 27 days each. Leaf punch (LP) samples and bulb tissue samples were compared with ground controls (GC) from the Kennedy Space Center (KSC) and lab plants. Genes characterizing general metabolism and stress responses were measured using qPCR and compared with RNA-seq and displayed stable transcription in LP samples in GC but decreased in ISS samples. RNA-seq resulted in different profiles than LP data, and RNA-seq of leaf samples displayed greater variety than qPCR data. Time analyses showed small changes in space and ground controls. This is the first study comparing developmental changes in space-grown plants with ground controls based on a comparison of RNA-seq and qPCR.”

37

Hauserman MR, Ferraro MJ, Carroll RK, Rice KC.

**Altered quorum sensing and physiology of *Staphylococcus aureus* during spaceflight detected by multi-omics data analysis.**

npj Microgravity. 2024 Jan 8;10(1):2.

<https://doi.org/10.1038/s41526-023-00343-7>

*Journal Impact Factor:* 5.1

38

Hauserman MR, Sullivan LE, James KL, Ferraro MJ, Rice KC.

**Response of *Staphylococcus aureus* physiology and Agr quorum sensing to low-shear modeled microgravity.**

Journal of Bacteriology. 2024 Aug 9;e00272-24.

<https://doi.org/10.1128/jb.00272-24>

*Journal Impact Factor:* 2.7

39

Herrera-Jordan K, Pennington P, Zea L.

**Reduced *Pseudomonas aeruginosa* cell size observed on planktonic cultures grown in the International Space Station.**

Microorganisms. 2024 Feb 16;12(2):393.

<https://doi.org/10.3390/microorganisms12020393>

*Journal Impact Factor:* 4.5

40

Hossain NI, Noushin T, Tabassum S.

**Tattoo-like flexible ethylene sensor for plant stress monitoring in real-time.**

Fungal Genet Biol. 2021 Jul;152:103567.

<https://doi.org/10.1109/JSEN.2023.3327547>

*Journal Impact Factor:* 4.3

41

Houerbi N, Kim J, Overbey EG, Batra R, Schweickart A, Patras L, Lucotti S, Ryon KA, Najjar D, Meydan C, Damle N, Chin C, Narayanan SA, Guarnieri JW, Widjaja G, Beheshti A, Tobias G, Vatter F, Hirschberg JW, Kleinman A, Afshin EE, MacKay M, Chen Q, Miller D, Gajadhar AS, Williamson L, Tandel P, Yang Q, Chu J, Benz R, Siddiqui A, Hornburg D, Gross S, Shirah B, Krumsiek J, Mateus J, Mao X, Matei I, Mason CE.

**Secretome profiling reveals acute changes in oxidative stress, brain homeostasis, and coagulation following short-duration spaceflight.**

Nat Commun. 2024 Jun 11;15:4862.

<https://doi.org/10.1038/s41467-024-48841-w>

*Journal Impact Factor:* 16.6



42

Issertine M, Rosa-Calwell ME, Sung DM, Bouxsein ML, Rutkove SB, Mortreux M.

**Adaptation to full weight-bearing following disuse in rats: The impact of biological sex on musculoskeletal recovery.**

Physiol Rep. 2024 Feb 21;12(4):e15938.

<https://doi.org/10.14814/phy2.15938>

*Journal Impact Factor:* 2.5

43

Iwakoshi N, Kelley T, Hopkins S, Thompson R, Tan J, Pecaut M, Fleshner M, Wilson C.

**A prebiotic diet increases cardiovascular adaptability under hypergravity-induced stress.**

Physiology. 2024 May 21;39(S1):1751.

<https://doi.org/10.1152/physiol.2024.39.S1.1751>

*Journal Impact Factor:* 5.3

44

Jahng JWS, Little MP, No HJ, Loo BW Jr, Wu JC.

**Consequences of ionizing radiation exposure to the cardiovascular system.**

Nat Rev Cardiol. 2024 Jul 10.

<https://doi.org/10.1038/s41569-024-01056-4>

*Journal Impact Factor:* 41.7

45

Jones CW, Overbey EG, Lacombe J, Ecker AJ, Meydan C, Ryon K, Tierney B, Damle N, MacKay M, Afshin EE, Foox J, Park J, Nelson T, Suhail M, Byhaqui SG, Aslam B, Tali UA, Nisa L, Menon P, Patel CO, Khan SA, Ebert DJ, Everson A, Schubert MC, Ali NN, Sarma MS, Kim J, Houerbi N, Grigorev K, Garcia Medina S, Summers AJ, Gu J, Altin JA, Fattahi A, Hirzallah MI, Wu JH, Stahn AC, Beheshti A, Klotz R, Ortiz V, Yu M, Patras L, Matei I, Lyden D, Melnick A, Banerjee N, Mullane S, Kleinman A, Loesche M, Menon AS, Donoviel DB, Urquieta E, Mateus J, Sargsyan AE, Shelhamer M, Zenhausern F, Bershad EM, Basner M, Mason CE.

**Molecular and physiologic changes in the SpaceX Inspiration4 civilian crew.**

Nature. 2024 Jun 11.

<https://doi.org/10.1038/s41586-024-07648-x>

*Journal Impact Factor:* 64.8

46

Justiniano YA, Goeres DM, Sandvik EL, Kjellerup BV, Sysoeva TA, Harris JS, Warnat S, McGlennen M, Foreman CM, Yang J, Li W.

**Mitigation and use of biofilms in space for the benefit of human space exploration.**

Biofilm. 2023 Dec;5:100102.

<https://doi.org/10.1016/j.biofilm.2022.100102>

*Journal Impact Factor:* 5.9

47

Kamal KY, Othman MA, Kim J-H, Lawler JM.

**Bioreactor development for skeletal muscle hypertrophy and atrophy by manipulating uniaxial cyclic strain: Proof of concept.**

npj Microgravity. 2024 Jun 11;10:62.

<https://doi.org/10.1038/s41526-023-00320-0>

*Journal Impact Factor:* 5.1

48

Keune JA, Wong CP, Branscum AJ, Menn SA, Iwaniec UT, Turner RT.

**Bone marrow adipose tissue is not required for reconstitution of the immune system following irradiation in male mice.**

Int J Mol Sci. 2024 Feb 6;25(4):1980.

<https://doi.org/10.3390/ijms25041980>

*Journal Impact Factor:* 2.5

49

Kim J, Tierney BT, Overbey EG, Dantas E, Fuentealba M, Park J, Narayanan SA, Wu F, Najjar D, Chin CR, Meydan C, Loy C, Mathyk B, Klotz R, Ortiz V, Nguyen K, Ryon KA, Damle N, Huerbi N, Patras LI, Schanzer N, Hutchinson GA, Foox J, Bhattacharya C, Mackay M, Afshin EE, Hirschberg JW, Kleinman AS, Schmidt JC, Schmidt CM, Schmidt MA, Beheshti A, Matei I, Lyden D, Mullane S, Asadi A, Lenz JS, Mzava O, Yu M, Ganesan S, De Vlaminc I, Melnick AM, Barisic D, Winer DA, Zwart SR, Crucian BE, Smith SM, Mateus J, Furman D, Mason CE.

**Single-cell multi-ome and immune profiles of the Inspiration4 crew reveal conserved, cell-type, and sex-specific responses to spaceflight.**

Nat Commun. 2024 Jun 11;15:4954.

<https://doi.org/10.1038/s41467-024-49211-2>

*Journal Impact Factor:* 16.6

50

Koroli S, Buss K, Blain JM, Nakka GS, Hong M, McLean RJC, Plugge CM, Yang J.

**Draft genome sequence of *Sphingomonas paucimobilis* strain Sph5, isolated from tap water filtration membrane.**

Microbiol Resour Announc. 2023 Dec 1;e00345-23.

<https://doi.org/10.1128/MRA.00345-23>

*Journal Impact Factor:* 0.303

51

Kuhlman BM, Diaz JH, Simon T, Reeves KD, Walker SJ, Atala A, Almeida-Porada G, Porada CD.

**Simulated microgravity impairs human NK [natural killer] cell cytotoxic activity against space radiation-relevant leukemic cells.**

npj Microgravity. 2024 Aug 14;10:85.

<https://doi.org/10.1038/s41526-024-00424-1>

*Journal Impact Factor:* 5.1

52

Land ES, Sheppard J, Doherty CJ, Perera IY.

**Conserved plant transcriptional responses to microgravity from two consecutive spaceflight experiments.**

Front Plant Sci. 2023 Jan 8;14:1308713.

<https://doi.org/10.3389/fpls.2023.1308713>

*Journal Impact Factor:* 5.6

53

Lapointe MR, Laframboise T, Pirkkanen J, Tai TC, Lees SJ, Santa Maria SR, Tharmalingam S, Boreham DR, Thome C.

**Protracted exposure to a sub-background radiation environment negatively impacts the anhydrobiotic recovery of desiccated yeast sentinels.**

Health Phys. 2024 Jun;126(6):397-404.

<https://doi.org/10.1097/HP.0000000000001804>

*Journal Impact Factor:* 2.2

54

Ludtka C, Allen JB.

**The effects of simulated and real microgravity on vascular smooth muscle cells.**

Gravitational and Space Research. 2024 May 25;12(1):46-59.

<https://doi.org/10.2478/gsr-2024-0003>

*Journal Impact Factor:* 0.4

55

Ma N, Mourkioti F.

**Ex vivo two-photon imaging of whole-mount skeletal muscles to visualize stem cell behavior.**

STAR Protoc. 2023 Dec 11;5(1):102772.

<https://doi.org/10.1016/j.xpro.2023.102772>

*Journal Impact Factor:* Not available for this journal

56

Malatesta P, Kyriakidis K, Hada M, Ikeda H, Takahashi A, Saganti PB, Georgakilas AG, Michalopoulos I.

**Differential gene expression in human fibroblasts simultaneously exposed to ionizing radiation and simulated microgravity.**

Biomolecules. 2024 Jan 10;14(1):88.

<https://doi.org/10.3390/biom14010088>

*Journal Impact Factor:* 5.5

57

Mao XW, Pecaut M, Stanbouly S, Nelson G.

**Oxidative stress, neuroinflammation, and the blood-brain barrier biomarkers on the brain response to spaceflight.**

Life Sci Space Res. 2024 Aug 8.

<https://doi.org/10.1016/j.lssr.2024.08.001>

*Journal Impact Factor:* 2.9

58

Masarapu Y, Cekanaviciute E, Andrusivova Z, Westholm JO, Björklund Å, Fallegger R, Badia-i-Mompel P, Boyko V, Vasisht S, Saravia-Butler A, Gebre S, Lázár E, Graziano M, Frapard S, Hinshaw RG, Bergmann O, Taylor DM, Wallace DC, Sylvén C, Meletis K, Saez-Rodriguez J, Galazka JM, Costes SV, Giacomello S.

**Spatially resolved multiomics on the neuronal effects induced by spaceflight in mice.**

Nat Commun. 2024 Jun 11;15:4778.

<https://doi.org/10.1038/s41467-024-48916-8>

*Journal Impact Factor:* 16.6

59

Mason CE, Green J, Adamopoulos KI, Afshin EE, Baechle JJ, Basner M, Bailey SM, Bielski L, Borg J, Borg J, Broddrick JT, Burke M, Caicedo A, Castañeda V, Chatterjee S, Chin C, Church G, Costes SV, De Vlaminck I, Desai RI, Dhira R, Diaz JE, Etlin SM, Feinstein Z, Furman D, Garcia-Medina JS, Garrett-Bakelman F, Giacomello S, Gupta A, Hassanin A, Hauerbi N, Irby I, Javorsky E, Jirak P, Jones CW, Kamal KY, Kangas BD, Karouia F, Kim J, Kim JH, Kleinman A, Lam T, Lawler JM, Lee JA, Limoli CL, Lucaci A, MacKay M, McDonald JT, Melnick AM, Meydan C, Mieczkowski J, Muratani M, Najjar D, Othman MA, Overbey EG, Paar V, Park J, Paul AM, Perdyan A, Proszynski J, Reynolds RJ, Ronca AE, Rubins K, Ryon KA, Sanders LM, Glowe PS, Shevde Y, Schmidt MA, Scott RT, Shirah B, Sienkiewicz K, Sierra M, Siew K, Theriot CA, Tierney BT, Venkateswaran K, Hirschberg JW, Walsh SB, Walter C, Winer DA, Yu M, Zea L, Mateus J, Beheshti A.

**A second space age spanning omics, platforms, and medicine across orbits.**

Nature. 2024 Jun 11.

<https://doi.org/10.1038/s41586-024-07586-8>

*Journal Impact Factor:* 64.8

60

Mathyk BA, Tabetah M, Karim R, Zaksas V, Kim J, Anu RI, Muratani M, Tasoula A, Singh RS, Chen YK, Overbey E, Park J, Cope H, Fazelina H, Povero D, Borg J, Klotz RV, Yu M, Young SL, Mason CE, Szewczyk N, St Clair RM, Karouia F, Beheshti A.

**Spaceflight induces changes in gene expression profiles linked to insulin and estrogen.**

Commun Biol. 2024 Jun 11;7:692.

<https://doi.org/10.1038/s42003-023-05213-2>

*Journal Impact Factor:* 3.512

61

McDonald JT, Kim J, Farmerie L, Johnson ML, Trovao NS, Arif S, Siew K, Tsoy S, Bram Y, Park J, Overbey E, Ryon K, Haltom J, Singh U, Enguita FJ, Zaksas V, Guarnieri JW, Topper M, Wallace DC, Meydan C, Baylin S, Meller R, Muratani M, Porterfield DM, Kaufman B, Mori MA, Walsh SB, Sigaudou-Roussel D, Mebarek S, Bottini M, Marquette CA, Wurtele ES, Schwartz RE, Galeano D, Mason CE, Grabham P, Beheshti A.

**Space radiation damage rescued by inhibition of key spaceflight associated miRNAs.**

Nat Commun. 2024 Jun 11;15(1):4825.

<https://doi.org/10.1038/s41467-024-48920-y>

*Journal Impact Factor:* 16.6

62

Meas SJ, Daire GM, Friedman MA, DeNapoli R, Ghosh P, Farr JN, Donahue HJ.

**A comparison of bone microarchitectural and transcriptomic changes in murine long bones in response to hindlimb unloading and aging.**

Bone. 2023 Nov 21;116973.

<https://doi.org/10.1016/j.bone.2023.116973>

*Journal Impact Factor:* 3.5

63

Miliotis G, McDonagh F, Singh NK, O'Connor L, Tuohy A, Morris D, Venkateswaran K.

**Genomic analysis reveals the presence of emerging pathogenic *Klebsiella* lineages aboard the International Space Station.**

Microbiol Spectr. 2023 Nov 15;e0189723.

<https://doi.org/10.1128/spectrum.01897-23>

*Journal Impact Factor:* 7.043

64

Morsi AH, Massa GD, Morrow RC, Wheeler RM, Elsysy MA, Mitchell CA.

**Leaf yield and mineral content of mizuna in response to cut-and-come-again harvest, substrate particle size, and fertilizer formulation in a simulated spaceflight environment.**

Life Sci Space Res. 2024 Feb;40:106-14.

<https://doi.org/10.1016/j.lssr.2023.09.005>

*Journal Impact Factor:* 2.5

65

Narayanan SA, Jamison DA, Jr., Guarnieri JW, Zaksas V, Topper M, Koutnik AP, Park J, Clark KB, Enguita FJ, Leitão AL, Das S, Moraes-Vieira PM, Galeano D, Mason CE, Trovão NS, Schwartz RE, Schisler JC, Coelho-Dos-Reis JGA, Wurtele ES, Beheshti A.

**A comprehensive SARS-CoV-2 and COVID-19 review, Part 2: Host extracellular to systemic effects of SARS-CoV-2 infection.**

Eur J Hum Genet. 2023 Nov 8.

<https://doi.org/10.1038/s41431-023-01462-1>

*Journal Impact Factor:* 5.2

66

Nastasi N, Bope A, Meyer ME, Horack JM, Dannemiller KC.

**Predicting how varying moisture conditions impact the microbiome of dust collected from the International Space Station.**

Microbiome. 2024 Sep 10;12(1):171.

<https://doi.org/10.1186/s40168-024-01864-3>

*Journal Impact Factor:* 13.8

67

Nastasi N, Haines SR, Bope A, Meyer ME, Horack JM, Dannemiller KC.

**Fungal diversity differences in the indoor dust microbiome from built environments on Earth and in space.**

Sci Rep. 2024 May 24;14:11858.

<https://doi.org/10.1038/s41598-024-62191-z>

*Journal Impact Factor:* 4.6

68

Nickerson CA, McLean RJC, Barrila J, Yang J, Thornhill SG, Banken LL, Porterfield DM, Poste G, Pellis NR, Ott CM.

**Microbiology of human spaceflight: Microbial responses to mechanical forces that impact health and habitat sustainability.**

Microbiol Mol Biol Rev. 2024 Aug 19;e00144-23.

<https://doi.org/10.1128/membr.00144-23>

*Journal Impact Factor:* 8.0

Cover image: “On the cover: Microorganisms are inextricably connected with all aspects of human spaceflight. As we look toward successfully expanding our presence and influence beyond the confines of Earth, it will be essential to understand microbial interactions with humans, their environment, and other microorganisms to protect health and habit sustainability both in space and on the surface of other celestial bodies. (See related article Nickerson et al.)”

69

Ocampo J, Barker H, Rice KC, Ferraro MJ.

**Impact of payload shielding on *Enterobacter cloacae* viability and proteomic profile: Insights from a stratospheric weather balloon flight experiment.**

Gravit Space Res. 2024 Jun 9;12(1):64-76.

<https://doi.org/10.2478/gsr-2024-0005>

*Journal Impact Factor:* 2.5

70

Olanrewaju GO, Haveman NJ, Naldrett MJ, Paul A-L, Ferl RJ, Wyatt SE.

**Integrative transcriptomics and proteomics profiling of *Arabidopsis thaliana* elucidates novel mechanisms underlying spaceflight adaptation.**

Front Plant Sci. 2023 Nov 27;14:1260429.

<https://doi.org/10.3389/fpls.2023.1260429>

*Journal Impact Factor:* 5.6

71

Overbey EG, Ryon K, Kim J, Tierney BT, Klotz R, Ortiz V, Mullane S, Schmidt JC, MacKay M, Damle N, Najjar D, Matei I, Patras L, Garcia Medina JS, Kleinman AS, Wain Hirschberg J, Proszynski J, Narayanan SA, Schmidt CM, Afshin EE, Innes L, Saldarriaga MM, Schmidt MA, Granstein RD, Shirah B, Yu M, Lyden D, Mateus J, Mason CE.

**Collection of biospecimens from the Inspiration4 mission establishes the standards for the Space Omics and Medical Atlas (SOMA).**

Nat Commun. 2024 Jun 11;15:4964.

<https://doi.org/10.1038/s41467-024-48806-z>

*Journal Impact Factor:* 16.6

72

Overbey EG, Kim J, Tierney BT, Park J, Hauerbi N, Lucaci AG, Medina SG, Damle N, Najjar D, Grigorev K, Afshin EE, Ryon KA, Sienkiewicz K, Patras L, Klotz R, Ortiz V, MacKay M, Schweickart A, Chin CR, Sierra MA, Valenzuela MF, Dantas E, Nelson TM, Cekanaviciute E, Deards G, Foox J, Narayanan SA, Schmidt CM, Schmidt MA, Schmidt JC, Mullane S, Tigchelaar SS, Levitte S, Westover C, Bhattacharya C, Lucotti S, Hirschberg JW, Proszynski J, Burke M, Kleinman A, Butler DJ, Loy C, Mzava O, Lenz J, Paul D, Mozsary C, Sanders LM, Taylor LE, Patel CO, Khan SA, Suhail M, Byhaqui SG, Aslam B, Gajadhar AS, Williamson L, Tandel P, Yang Q, Chu J, Benz RW, Siddiqui A, Hornburg D, Blease K, Moreno J, Boddicker A, Zhao J, Lajoie B, Scott RT, Gilbert RR, Polo SL, Altomare A, Kruglyak S, Levy S, Ariyapala I, Beer J, Zhang B, Hudson BM, Rininger A, Church SE, Beheshti A, Church GM, Smith SM, Crucian BE, Zwart SR, Matei I, Lyden DC, Garrett-Bakelman F, Krumsiek J, Chen Q, Miller D, Shuga J, Williams S, Nemec C, Trudel G, Pelchat M, Laneuville O, De Vlaminck I, Gross S, Bolton KL, Bailey SM, Granstein R, Furman D, Melnick AM, Costes SV, Shirah B, Yu M, Menon AS, Mateus J, Meydan C, Mason CE.

**The Space Omics and Medical Atlas (SOMA) and international astronaut biobank.**

Nature. 2024 Jun 11.

<https://doi.org/10.1038/s41586-024-07639-y>

*Journal Impact Factor:* 64.8

73

Park J, Overbey EG, Narayanan SA, Kim J, Tierney BT, Damle N, Najjar D, Ryon KA, Proszynski J, Kleinman A, Hirschberg JW, MacKay M, Afshin EE, Granstein R, Gurvitch J, Hudson BM, Rininger A, Mullane S, Church SE, Meydan C, Church G, Beheshti A, Mateus J, Mason CE.

**Spatial multi-omics of human skin reveals KRAS and inflammatory responses to spaceflight.**

Nat Commun. 2024 Jun 11;15:4773.

<https://doi.org/10.1038/s41467-024-48625-2>

*Journal Impact Factor:* 16.6

74

Raber J, Holden S, Kessler K, Glaeser B, McQuesten C, Chaudhari M, Stenzel F, Lenarczyk M, Leonard SW, Morré J, Choi J, Kronenberg A, Borg A, Kwok A, Stevens JF, Olsen C, Willey JS, Bobe G, Minnier J, Baker JE.

**Effects of photon irradiation in the presence and absence of hindlimb unloading on the behavioral performance and metabolic pathways in the plasma of Fischer rats.**

Front Physiol. 2024 Jan 8;14:1316186.

<https://doi.org/10.3389/fphys.2023.1316186>

*Journal Impact Factor:* 4.0

75

Ranson TM, Barton ME, McLean RJC.

**Influence of central metabolism disruption on *Escherichia coli* biofilm formation.**

Can J Microbiol. 2023 Sep 20.

<https://doi.org/10.1139/cjm-2023-0096>

*Journal Impact Factor:* 2.8



76

Ren Z, Ahn EH, Do M, Mair DB, Monemianesfahani A, Lee PHU, Kim DH.

**Simulated microgravity attenuates myogenesis and contractile function of 3D engineered skeletal muscle tissues.**

npj Microgravity. 2024 Feb 16;10(1):18.

<https://doi.org/10.1038/s41526-024-00353-z>

*Journal Impact Factor:* 5.1

77

Rice KC, Davis KAT.

**Confocal microscopy of oral streptococcal biofilms grown in simulated microgravity using a random positioning machine.**

npj Microgravity. 2024 Sep 9;10(1):89.

<https://doi.org/10.1038/s41526-024-00427-y>

*Journal Impact Factor:* 5.1

78

Rosa-Caldwell ME, Pandeya S, Mortreux M, Rutkove SB.

**Predicting muscle function and mass with electrical impedance myography: A study in rat analogs of micro- and partial gravity.**

Acta Astronaut. 2024 Oct;223:384-8.

<https://doi.org/10.1016/j.actaastro.2024.07.017>

*Journal Impact Factor:* 3.1

79

Rutter LA, Cope H, MacKay MJ, Herranz R, Das S, Ponomarev SA, Costes SV, Paul AM, Barker R, Taylor DM, Bezdan D, Szewczyk NJ, Muratani M, Mason CE, Giacomello S.

**Astronaut omics and the impact of space on the human body at scale.**

Nat Commun. 2024 Jun 11;15:4952.

<https://doi.org/10.1038/s41467-024-47237-0>

*Journal Impact Factor:* 16.6

80

Seidler RD, Mao XW, Tays GD, Wang T, Zu Eulenburg P.

**Effects of spaceflight on the brain.**

Lancet Neurol. 2024 Aug;23(8):826-35.

[https://doi.org/10.1016/S1474-4422\(24\)00224-2](https://doi.org/10.1016/S1474-4422(24)00224-2)

*Journal Impact Factor:* 46.5

81

Sengupta P, Muthamilselvi Sivabalan SK, Singh NK, Raman K, Venkateswaran K.

**Genomic, functional, and metabolic enhancements in multidrug-resistant *Enterobacter bugandensis* facilitating its persistence and succession in the International Space Station.**

Microbiome. 2024 Mar 23;12:62.

<https://doi.org/10.1186/s40168-024-01777-1>

*Journal Impact Factor:* 15.5



82

Seylani A, Galsinh AS, Tasoula A, I AR, Camera A, Calleja-Agius J, Borg J, Goel C, Kim J, Clark KB, Das S, Arif S, Boerrigter M, Coffey C, Szewczyk N, Mason CE, Manoli M, Karouia F, Schwert H, Beheshti A, Tulodziecki D.

**Ethical considerations for the age of non-governmental space exploration.**

Nat Commun. 2024 Jun 11;15:4774.

<https://doi.org/10.1038/s41467-023-44357-x>

*Journal Impact Factor:* 16.6

83

Sharma S, Gilberto VS, Rask J, Chatterjee A, Nagpal P.

**Inflammasome-inhibiting nanoligomers are neuroprotective against space-induced pathology in healthy and diseased three-dimensional human motor and prefrontal cortex brain organoids.**

ACS Chem Neurosci. 2024 Jul 31.

<https://doi.org/10.1021/acchemneuro.4c00160>

*Journal Impact Factor:* 4.1

84

Siew K, Nestler KA, Nelson C, D'Ambrosio V, Zhong C, Li Z, Grillo A, Wan ER, Patel V, Overbey E, Kim J, Yun S, Vaughan MB, Cheshire C, Cubitt L, Broni-Tabi J, Al-Jaber MY, Boyko V, Meydan C, Barker P, Arif S, Afsari F, Allen N, Al-Maadheed M, Altinok S, Bah N, Border S, Brown AL, Burling K, Cheng-Campbell M, Colón LM, Degoricija L, Figg N, Finch R, Foox J, Faridi P, French A, Gebre S, Gordon P, Houerbi N, Valipour Kahrood H, Kiffer FC, Klosinska AS, Kubik A, Lee HC, Li Y, Lucarelli N, Marullo AL, Matei I, McCann CM, Mimar S, Naglah A, Nicod J, O'Shaughnessy KM, Oliveira LC, Oswald L, Patras LI, Lai Polo SH, Rodríguez-Lopez M, Roufosse C, Sadeghi-Alavijeh O, Sanchez-Hodge R, Paul AS, Schittenhelm RB, Schweickart A, Scott RT, Choy Lim Kam Sian TC, da Silveira WA, Slawinski H, Snell D, Sosa J, Saravia-Butler AM, Tabetah M, Tanuwidjaya E, Walker-Samuel S, Yang X, Yasmin, Zhang H, Godovac-Zimmermann J, Sarder P, Sanders LM, Costes SV, Campbell RAA, Karouia F, Mohamed-Alis V, Rodriques S, Lynham S, Steele JR, Baranzini S, Fazelinia H, Dai Z, Uruno A, Shiba D, Yamamoto M, E ACA, Blaber E, Schisler JC, Eisch AJ, Muratani M, Zwart SR, Smith SM, Galazka JM, Mason CE, Beheshti A, Walsh SB.

**Cosmic kidney disease: An integrated pan-omic, physiological and morphological study into spaceflight-induced renal dysfunction.**

Nat Commun. 2024 Jun 11;15:4923.

<https://doi.org/10.1038/s41467-024-49212-1>

*Journal Impact Factor:* 16.6

85

Simpson AC, Sengupta P, Zhang F, Hameed A, Parker CW, Singh NK, Miliotis G, Rekha PD, Raman K, Mason CE, Venkateswaran K.

**Phylogenomics, phenotypic, and functional traits of five novel (Earth-derived) bacterial species isolated from the International Space Station and their prevalence in metagenomes.**

Sci Rep. 2023 Nov 6;13:19207.

<https://doi.org/10.1038/s41598-023-44172-w>

*Journal Impact Factor:* 4.6

86

Simpson AC, Tighe S, Wong S, Leo P, Parker C, Chander AM, Williams M, Wu HW, Venkateswaran K, Singh NK.

**Analysis of microbiomes from ultra-low biomass surfaces using novel surface sampling and nanopore sequencing.**

J Biomol Tech. 2023 Sep 30;34(3):3fc1f5fe.bac4a5b3.

<https://doi.org/10.7171/3fc1f5fe.bac4a5b3>

Journal Impact Factor: 1.76

87

Soni P, Edwards H, Anupom T, Rahman M, Lesanpezeshki L, Blawdziewicz J, Cope H, Gharahdaghi N, Scott D, Toh LS, Williams PM, Etheridge T, Szewczyk N, Willis CRG, Vanapalli SA.

**Spaceflight induces strength decline in *Caenorhabditis elegans*.**

Cells. 2023 Oct 17;12(20):2470.

<https://doi.org/10.3390/cells12202470>

Journal Impact Factor: 6.0

88

Tahimic CGT, Steczina S, Sebastian A, Hum NR, Abegaz M, Terada M, Cimini M, Goukassian DA, Schreurs A-S, Hoban-Higgins TM, Fuller CA, Loots GG, Globus RK, Shirazi-Fard Y.

**Simulated microgravity alters gene regulation linked to immunity and cardiovascular disease.**

Genes. 2024 Jul 24;15(8):975.

<https://doi.org/10.3390/genes15080975>

Journal Impact Factor: 2.8

89

Tierney BT, Kim J, Overbey EG, Ryon KA, Foox J, Sierra MA, Bhattacharya C, Damle N, Najjar D, Park J, Garcia Medina JS, Hauerbi N, Meydan C, Wain Hirschberg J, Qiu J, Kleinman AS, Al-Ghalith GA, MacKay M, Afshin EE, Dhir R, Borg J, Gatt C, Brereton N, Readhead BP, Beyaz S, Venkateswaran KJ, Wiseman K, Moreno J, Boddicker AM, Zhao J, Lajoie BR, Scott RT, Altomare A, Kruglyak S, Levy S, Church GM, Mason CE.

**Longitudinal multi-omics analysis of host microbiome architecture and immune responses during short-term spaceflight.**

Nat Microbiol. 2024 Jun 11.

<https://doi.org/10.1038/s41564-024-01635-8>

Journal Impact Factor: 28.3

90

Tu C, Caudal A, Liu Y, Gorgodze N, Zhang H, Lam CK, Dai Y, Zhang A, Wnorowski A, Wu MA, Yang H, Abilez OJ, Lyu X, Narayan SM, Mestroni L, Taylor MRG, Recchia FA, Wu JC.

**Tachycardia-induced metabolic rewiring as a driver of contractile dysfunction.**

Nat Biomed Eng. 2023 Nov 27.

<https://doi.org/10.1038/s41551-023-01134-x>

Journal Impact Factor: 28.1

91

Tuladhar A, Shaver JC, McGee WA, Yu K, Dorn J, Horne JL, Alhamad DW, Hagan ML, Cooley MA, Zhong R, Bollag W, Johnson M, Hamrick MW, McGee-Lawrence ME.

**Prkd1 regulates the formation and repair of plasma membrane disruptions (PMD) in osteocytes.**

Bone. 2024 Sep;186:117147.

<https://doi.org/10.1016/j.bone.2024.117147>

Journal Impact Factor: 3.5

92

Vasanthakumari P, Romano RA, Rosa RGT, Salvio AG, Yakovlev V, Kurachi C, Hirshburg JM, Jo JA.

**Pixel-level classification of pigmented skin cancer lesions using multispectral autofluorescence lifetime dermoscopy imaging.**

Biomed Opt Express. 2024 Jul 9;15(8):4557-83.

<https://opg.optica.org/boe/abstract.cfm?URI=boe-15-8-4557>

Journal Impact Factor: 3.4

93

Waisberg E, Ong J, Masalkhi M, Mao XW, Beheshti A, Lee AG

**Mitochondrial dysfunction in Spaceflight Associated Neuro-Ocular Syndrome (SANS): A molecular hypothesis in pathogenesis.**

Eye (Lond). 2024 Feb 7.

<https://doi.org/10.1038/s41433-024-02951-3>

Journal Impact Factor: 3.9

94

Wheeler RM, Spencer LE, Bhuiyan RH, Mickens MA, Bunchek JM, van Santen E, Massa GD, Romeyn MW.

**Effects of elevated and super-elevated carbon dioxide on salad crops for space.**

J Plant Interact. 2024;19(1):2292219.

<https://doi.org/10.1080/17429145.2023.2292219>

Journal Impact Factor: 3.2

95

Whitcomb LA, Cao X, Thomas D, Wiese C, Pessin AS, Zhang R, Wu JC, Weil MM, Chicco AJ.

**Mitochondrial reactive oxygen species impact human fibroblast responses to protracted  $\gamma$ -ray exposures.**

Int J Radiat Biol. 2024 Apr 17;1-13.

<https://doi.org/10.1080/09553002.2024.2338518>

Journal Impact Factor: 2.6

96

Wu F, Du H, Overbey E, Kim J, Makhijani P, Martin N, Lerner CA, Nguyen K, Baechle J, Valentino TR, Fuentealba M, Bartleson JM, Halaweh H, Winer S, Meydan C, Garrett-Bakelman F, Sayed N, Melov S, Muratani M, Gerencser AA, Kasler HG, Beheshti A, Mason CE, Furman D, Winer DA.

**Single-cell analysis identifies conserved features of immune dysfunction in simulated microgravity and spaceflight.**

Nat Commun. 2024 Jun 11;15:4795.

<https://doi.org/10.1038/s41467-023-42013-y>

*Journal Impact Factor:* 16.6

97

Zeineddine Y, Friedman MA, Buettmann EG, Abraham LB, Hoppock GA, Donahue HJ.

**Genetic diversity modulates the physical and transcriptomic response of skeletal muscle to simulated microgravity in male mice.**

npj Microgravity. 2023 Dec 1;9:86.

<https://doi.org/10.1038/s41526-023-00334-8>

*Journal Impact Factor:* 5.1

98

Zhou M, Riva A, Gauthier ML, Kladde MP, Ferl RJ, Paul AL.

**Single-molecule long-read methylation profiling reveals regional DNA methylation regulated by Elongator Complex Subunit 2 in Arabidopsis roots experiencing spaceflight.**

Biol Direct. 2024 Apr 30;19(1):33.

<https://doi.org/10.1186/s13062-024-00476-z>

*Journal Impact Factor:* 5.5

99

Zupanska AK, Lockwood E, Zhang Y, Haveman NJ, Carver JA, Sporn CW, Senyk E, Richards JT, Koss LL, Dimapilis DI, McDaniel SF.

**Designing payload and spaceflight operations for plants from extreme terrestrial environments.**

Front Space Technol. 2024 Apr 3;5:1376163.

<https://doi.org/10.3389/frspt.2024.1376163>

*Journal Impact Factor:* Not available for this journal

**For additional information, contact:** Biological and Physical Sciences Division, National Aeronautics and Space Administration <https://science.nasa.gov/biological-physical>

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