



## Space Biology Publications—Fiscal Year 2020

1

Alder-Rangel A, Idnurm A, Brand AC, Brown AJP, Gorbushina A, Kelliher CM, Campos CB, Levin DE, Bell-Pedersen D, Dadachova E, Bauer FF, Gadd GM, Braus GH, Braga GUL, Brancini GTP, Walker GM, Druzhinina I, Pócsi I, Dijksterhuis J, Aguirre J, Hallsworth JE, Schumacher J, Wong KH, Selbmann L, Corrochano LM, Kupiec M, Momany M, Molin M, Requena N, Yarden O, Cordero RJB, Fischer R, Pascon RC, Mancinelli RL, Emri T, Basso TO, Rangel DEN.

### The Third International Symposium on Fungal Stress - ISFUS.

Fungal Biol. 2020 May;124(5):235-52.

<https://pubmed.ncbi.nlm.nih.gov/32389286>

Journal Impact Factor: 2.789

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Avila-Herrera A, Thissen J, Urbaniak C, Be NA, Smith DJ, Karouia F, Mehta S, Venkateswaran K, Jaing C.

### Crewmember microbiome may influence microbial composition of ISS habitable surfaces.

PLoS One. 2020 Apr 29;15(4):e0231838.

<https://pubmed.ncbi.nlm.nih.gov/32348348>

Journal Impact Factor: 2.776

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Axpe E, Chan D, Abegaz MF, Schreurs AS, Alwood JS, Globus RK, Appel EA.

### A human mission to Mars: Predicting the bone mineral density loss of astronauts.

PLoS One. 2020 Jan 23;15(1):e0226434.

<https://pubmed.ncbi.nlm.nih.gov/31967993>

Journal Impact Factor: 2.776

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Barker R, Lombardino J, Rasmussen Ki, Gilroy S.

### Test of *Arabidopsis* Space Transcriptome: A discovery environment to explore multiple plant biology spaceflight experiments.

Front Plant Sci. 2020 Mar 4;11:147.

<https://pubmed.ncbi.nlm.nih.gov/32265943>

Journal Impact Factor: 3.677

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Basu D, Haswell ES.

### The mechanosensitive ion channel MSL10 potentiates responses to cell swelling in *Arabidopsis* seedlings.

Curr Biol. 2020 Jul 20;30(14):2716-28 e6.

<https://pubmed.ncbi.nlm.nih.gov/32531281>

Journal Impact Factor: 9.193

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Beheshti A, Chakravarty K, Fogle H, Fazelinia H, Silveira WAD, Boyko V, Polo SL, Saravia-Butler AM, Hardiman G, Taylor D, Galazka JM, Costes SV.

**Multi-omics analysis of multiple missions to space reveal a theme of lipid dysregulation in mouse liver.**

Sci Rep. 2019 Dec 16;9(1):19195.

<https://pubmed.ncbi.nlm.nih.gov/31844325>

Journal Impact Factor: 4.011

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Bharadwaj AR, Singh NK, Wood JM, Debieu M, O'Hara NB, Karouia F, Mason CE, Venkateswaran K.

**Draft genome sequences of *Lactobacillales* isolated from the International Space Station.**

Microbiol Resour Announc. 2020 Sep 24;9(39):e00942-20.

<https://pubmed.ncbi.nlm.nih.gov/32972947>

Journal Impact Factor: 0.88

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Bijlani S, Singh NK, Mason CE, Wang CCC, Venkateswaran K.

**Draft genome sequences of *Sphingomonas* species associated with the International Space Station.**

Microbiol Resour Announc. 2020 Jun 18;9(25):e00578-20.

<https://pubmed.ncbi.nlm.nih.gov/32554796>

Journal Impact Factor: 0.88

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Bijlani S, Singh NK, Mason CE, Wang CCC, Venkateswaran K.

**Draft genome sequences of *Tremellomycetes* strains isolated from the International Space Station.**

Microbiol Resour Announc. 2020 Jun 25;9(26):e00504-20.

<https://pubmed.ncbi.nlm.nih.gov/32586865>

Journal Impact Factor: 0.88

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Blachowicz A, Raffa N, Bok JW, Choera T, Knox B, Lim FY, Huttenlocher A, Wang CCC, Venkateswaran K, Keller NP.

**Contributions of spore secondary metabolites to UV-C protection and virulence vary in different *Aspergillus fumigatus* strains.**

MBio. 2020 Feb 18;11(1):e03415-19.

<https://pubmed.ncbi.nlm.nih.gov/32071276>

Journal Impact Factor: 6.747

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Boothby TC.

**Mechanisms and evolution of resistance to environmental extremes in animals.**

Evodevo. 2019 Nov 18;10:30. Review.

<https://pubmed.ncbi.nlm.nih.gov/31827759>

Journal Impact Factor: 2.120

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Brandon TA, Stamps BW, Cummings A, Zhang T, Wang X, Jiang D.

**Poised potential is not an effective strategy to enhance bio-electrochemical denitrification under cyclic substrate limitations.**

Sci Total Environ. 2020 Apr 15;713:136698.

<https://pubmed.ncbi.nlm.nih.gov/32019036>

*Journal Impact Factor:* 6.551

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Burgner SE, Nemali K, Massa GD, Wheeler RM, Morrow RC, Mitchell CA.

**Growth and photosynthetic responses of Chinese cabbage (*Brassica rapa* L. cv. Tokyo Bekana) to chronically super-elevated carbon dioxide in a simulated Space Station "Veggie" crop-production environment.**

Life Sci Space Res. 2020 Nov;27:83-8. Epub 2020 Jul 24.

<http://www.sciencedirect.com/science/article/pii/S221455242030064X>

*Journal Impact Factor:* 2.453

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Califar B, Sng NJ, Zupanska AK, Paul A-L, Ferl RJ.

**Root skewing-associated genes impact the spaceflight response of *Arabidopsis thaliana*.**

Front Plant Sci. 2020 Mar 4;11:239.

<https://pubmed.ncbi.nlm.nih.gov/32194611>

*Journal Impact Factor:* 3.677

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Cao L, Gurevich A, Alexander KL, Naman CB, Leão T, Glukhov E, Luzzatto-Knaan T, Vargas F, Quinn R, Bouslimani A, Nothias LF, Singh NK, Sanders JG, Benitez RAS, Thompson LR, Hamid MN, Morton JT, Mikheenko A, Shlemov A, Korobeynikov A, Friedberg I, Knight R, Venkateswaran K, Gerwick WH, Gerwick L, Dorrestein PC, Pevzner PA, Mohimani H.

**MetaMiner: A scalable peptidogenomics approach for discovery of ribosomal peptide natural products with blind modifications from microbial communities.**

Cell Syst. 2019 Nov 27;9:1-9.

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*Journal Impact Factor:* 8.640

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Carr CE, Bryan NC, Saboda KN, Bhattacharjee SA, Ruvkun G, Zuber MT.

**Nanopore sequencing at Mars, Europa, and microgravity conditions.**

npj Microgravity. 2020 Sep 7;6:24.

<https://pubmed.ncbi.nlm.nih.gov/32964110>

*Journal Impact Factor:* 3.380

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Choi SY, Saravia-Butler A, Shirazi-Fard Y, Leveson-Gower D, Stodieck LS, Cadena SM, Beegle J, Solis S, Ronca A, Globus RK.

**Validation of a new rodent experimental system to investigate consequences of long duration space habitation.**

Sci Rep. 2020 Feb 11;10(1):2336.

<https://pubmed.ncbi.nlm.nih.gov/32047211>

Journal Impact Factor: 4.011

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**Spaceflight-induced bone tissue changes that affect bone quality and increase fracture risk.**

Curr Osteoporos Rep. 2020 Feb;18(1):1-12. Review.

<https://pubmed.ncbi.nlm.nih.gov/31897866>

Journal Impact Factor: 3.927

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**Draft genome sequences of *Rhodotorula mucilaginosa* strains isolated from the International Space Station.**

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Journal Impact Factor: 0.88

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Front Plant Sci. 2020 Feb 4;11:5.

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**Multiscale effects of spaceflight on murine tendon and bone.**

Bone. 2020 Feb;131:115152.

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**Space radiation biology for "living in space."**

Biomed Res Int. 2020 Apr 8;2020:4703286. Review.

<https://pubmed.ncbi.nlm.nih.gov/32337251>

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**A conditional mutation in *SCD1* reveals linkage between PIN protein trafficking, auxin transport, gravitropism, and lateral root initiation.**

Front Plant Sci. 2020 Jul 7;11:910.

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Journal Impact Factor: 4.402

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**Spaceflight and simulated microgravity conditions increase virulence of *Serratia marcescens* in the *Drosophila melanogaster* infection model.**

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Arch Oral Biol. 2019 Nov 18;110:104621.

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**RNAseq analysis of the response of *Arabidopsis thaliana* to fractional gravity under blue-light stimulation during spaceflight.**

Front Plant Sci. 2019 Nov 26;10:1529.

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**Tonoplast-localized Ca<sup>2+</sup> pumps regulate Ca<sup>2+</sup> signals during pattern-triggered immunity in *Arabidopsis thaliana*.**

Proc Natl Acad Sci U S A. 2020 Aug 4;117(31):18849-57.

<https://pubmed.ncbi.nlm.nih.gov/32690691>

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28

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**Sierra Nevada sweep: Metagenomic measurements of bioaerosols vertically distributed across the troposphere.**

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Nutrients. 2020 May 20;12(5):E1482.  
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*Journal Impact Factor:* 4.171

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**Microbiological and nutritional analysis of lettuce crops grown on the International Space Station.**  
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**Comparison of microgravity analogs to spaceflight in studies of plant growth and development.**  
Front Plant Sci. 2019 Dec 6;10:1577. Review.  
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**Dose-dependent skeletal deficits due to varied reductions in mechanical loading in rats.**  
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**Spaceflight induces novel regulatory responses in *Arabidopsis* seedling as revealed by combined proteomic and transcriptomic analyses.**  
BMC Plant Biol. 2020 May 27;20(1):237.  
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**Altered rodent gait characteristics after ~35 days in orbit aboard the International Space Station.**

Life Sci Space Res. 2020 Feb;24:9-17.

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Proc Natl Acad Sci U S A. 2019 Nov 19;116(47):23829-39.

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Journal Impact Factor: 9.5804

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**Pluronic gel-based burrowing assay for rapid assessment of neuromuscular health in *C. elegans*.**

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mSystems. 2020 Jul 28;5(4):e00367-20.

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**Spaceflight induces oxidative damage to blood-brain barrier integrity in a mouse model.**

FASEB J. 2020 Sep 26. [Epub ahead of print]

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*Journal Impact Factor:* 2.474

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*Journal Impact Factor:* 6.162

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*Journal Impact Factor:* Not available for this journal

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*Journal Impact Factor:* 4.106

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**The partial weight-bearing rat model using a pelvic harness does not impact stress or hindlimb blood flow.**

Acta Astronaut. 2020 Mar 1;168:249-55.

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*Journal Impact Factor:* 2.482

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PLoS One. 2020 Feb 20;15(2):e0227152.

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Journal Impact Factor: 2.776

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***EcAMSat* spaceflight measurements of the role of  $\sigma^s$  in antibiotic resistance of stationary phase *Escherichia coli* in microgravity.**

Life Sci Space Res. 2020 Feb;24:18-24.

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Journal Impact Factor: 3.768

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*Journal Impact Factor:* 1.882

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*Journal Impact Factor:* 4.76

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*Journal Impact Factor:* 4.235

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*Journal Impact Factor:* 3.082

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Journal Impact Factor: 3.485

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Front Physiol. 2020 Apr 3;11:302.

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Front Physiol. 2020 Sep 15;11:1181.

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Journal Impact Factor: 3.367

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Gravit Space Res. 2020 May 20;8(1):1.

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Journal Impact Factor: 0.486

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*Journal Impact Factor:* 4.011

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*Journal Impact Factor:* 7.299

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*Note:* Clarification of the labels on the western blots in Figures 2E, 4D, and 4G appears in

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*Journal Impact Factor:* 14.415

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mSystems. 2020 Aug 4;5(4):e00504-20.

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*Journal Impact Factor:* 6.280

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Life Sci Space Res. 2020 Aug;26:1-9.

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*Journal Impact Factor:* 2.066

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