Shannon M. Hibbard

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Education

- Doctor of Philosophy in Geology and Planetary Science, 2017–2021
  - Institute for Earth and Space Exploration, Department of Earth Sciences
    University of Western Ontario
    - Thesis Advisor: Dr. Gordon Osinski
    - Thesis Title: "Surface morphology and subsurface ice content relationships in Arcadia Planitia, Mars and the Canadian High Arctic"

- Master of Science in Geological Sciences, 2015–2017
  - Department of Earth and Environmental Sciences, Temple University
    - Thesis Advisor: Dr. Alexandra Krull-Davatzes
    - Thesis Title: "Particle Collision within Large Impact Plumes: Textural and geochemical evidence from type 4b spherules in the S3 spherule layer in Barberton Greenstone Belt, South Africa"

- Bachelor of Science (with research distinction) in Geological Sciences, 2010–2014
  - School of Earth Sciences, The Ohio State University
    - Thesis Advisor: Dr. Lawrence Krissek
    - Thesis Title: "Controls on gravel composition in a proglacial environment, Kaunertal, Austria"

Work Experience

09/23–Present Assistant Research Professor, Desert Research Institute, Reno, NV

09/21–09/23 NASA Postdoctoral Program (NPP) Fellow, Oak Ridge Associated Universities (ORAU), Jet Propulsion Laboratory (JPL), California Institute of Technology, Pasadena, CA
- Advisor: Dr. Matthew Golombek

09/17–08/21 Graduate Teaching Assistant, University of Western Ontario, London, ON, Canada
- Assisted with the delivery of the courses ES1086F: *Origin and Geology of the Solar System*, ES2240F: *Catastrophic Events in Earth's History*, AS2232G: *Sun, Earth and Planets*, ES4462A *Glacial and Quaternary Geology*

09/18–12/18 Instructor, University of Western Ontario, London, ON, Canada
- Taught fourth-year undergraduate Glacial and Quaternary Geology course ES4462A

06/18–08/18 Exploring Earth Blog Writer, Canadian Space Agency, University of Western Ontario, London, ON, Canada

04/18–06/18 Outreach Officer, Centre for Planetary Science and Exploration (CPSX), University of Western Ontario, London, ON, Canada

06/17–08/17 Research/Mission Intern, Summer Internship Program (SIP), NASA Jet Propulsion Laboratory (JPL), California Institute of Technology, Pasadena, CA, with Dr. Matthew Golombek

08/15–05/17 Graduate Teaching Assistant, Temple University, Philadelphia, PA
- Assisted with the delivery of the courses EES 2097: *Process Geomorphology,* EES 4101: *Structural Geology,* EES 2001*: Physical Geology,* EES 0854*: Geology of National Parks,* and EES 0836*: Disasters: Geology vs. Hollywood*

07/15–08/15 Soils and Concrete Testing Lab Technician, Terracon, Columbus, OH

03/15–07/15 Soils and Concrete Testing Lab Technician, Professional Service Industries, Inc. (PSI), Columbus, OH

05/14–07/14 Research Intern, Martin Luther University Halle-Wittenberg, Germany
- Worked with Dr. David Morche and Henning Baewert on proglacial sediment budget and landscape evolution

11/13 Research Assistant, United States Antarctic Program (USAP)
- Worked in the McMurdo Dry Valleys, Antarctica with Dr. Joseph Levy on ancient buried ice and paleo-landscape evolution

05/13–07/13 Research Intern, Martin Luther University Halle-Wittenberg, Germany
- Worked with Dr. David Morche and Henning Baewert on proglacial sediment budget and landscape evolution

Mission Experience and Other Training

11/21–Present Collaborator on the Rover–Aerial Vehicle Exploration Network (RAVEN), PI: Christopher Hamilton, University of Arizona
- Participate in the field-based science implementation group in the Holuhraun region of Iceland. Leading Ground Penetrating Radar data collection. Participating in JPL's Helicopter Science Operations led by Katie Stack Morgan.

11/21–07/22 Reconnaissance/Science Measurement Definition Team Member, International Mars Ice Mapper Mission
- Contribute expertise to define measurements for the anchor payload (L-band SAR/Sounder), identify potential augmentations to maximize the mission's return (high-res camera, VHF sounder, prepare a model concept of operations, and write up a final report of our findings.
- Part of the Ice Detection Subgroup (RO-1), Candidate Sites for Human Exploration Subgroup (RO-3), Human Mission Planning Group, Geosphere Subgroup, and Habitability Subgroup

11/17–08/21 HiRISE Science and Operations Planning Volunteer, PI: Alfred McEwen, Co-I: Livio Tornabene, University of Western Ontario

- Participate in bi-weekly meetings to assess viability of potential HiRISE targets and assign priority

09/20 Observer, Europa Clipper Project Science Group #9, NASA

08/19 Science-Planning Investigator, 2019 Lunar Analogue CanMoon mission at the University of Western Ontario

11/18 HiRISE Science and Operations Planning Cycle 316 Participant, University of Western Ontario
- Assisted the Co-I of the Pay Period (CIPP) during the planning of cycle 316, CIPP-Lite cycle with Dr. Livio Tornabene and Dr. Eric Pilles

09/16 Participant in the LPI Meteor Crater Field Camp Program, Lunar and Planetary Institute (LPI), Meteor Crater, Winslow, AZ

Honors, Grants and Awards

09/21–Present NASA Postdoctoral Program (NPP) Fellowship, Oak Ridge Associated Universities (ORAU), Jet Propulsion Laboratory (JPL), California Institute of Technology, Pasadena, CA

03/22 Temple University's 2022 Research and Technology Innovator 30 Under 30 Award, Temple University

04/21–10/22 Europlanet 2024 RI Programme & Transnational Access (TA), Co-Investigator, TA1 – Planetary Field Analogues (PFA) Title: Uncrewed Aerial System (UAS) and LiDAR Survey of Relict and Active Periglacial Patterned Ground as Analogues for Mars
- Project Number: 20-EPN2-105

08/20–12/20 Mitacs Research Training Award (RTA), University of Western Ontario and Mitacs

01/20 Travel Grant to attend the Seventh International Conference on Mars Polar Science and Exploration, International Association of Cryospheric Sciences (IACS)

05/17 Graduate Award for Outstanding Teaching, College of Science and Technology, Temple University, Philadelphia, PA

Council Experience

02/21–Present Dissemination Committee Member, Canadian Permafrost Association (CPA)
05/18–05/19 Earth Sciences Representative, Graduate Student Council, Centre for Planetary Science and Exploration (CPSX), University of Western Ontario

Professional Affiliations

07/21–Present Member, Permafrost Young Researchers Network (PYRN)
01/20–Present Member, International Association of Cryospheric Sciences (IACS)
10/20–Present Member, Canadian Permafrost Association (CPA)

09/14–Present Member, Geological Society of America (GSA)

Student Mentorship

07/23–09/23 Advisor, Masters Student, Izac Torres, Validation and application of a new model that predicts soil conditions globally

07/23–09/23 Mentor, SUPR JPL Intern, Margaret Deahn, Determining size frequency distribution of Corinto secondary craters on Mars

06/21–08/21 Mentor, Student Internship, Western BSc student Wendy Boucher, Mapping Canadian High Arctic periglacial and glacial features

02/21–04/21 Mentor, Student Internship, Western BSc student Robert Silber, Data Management and Calibration on Canadian High Arctic DEMs and GPS

12/20–06/21 Mentor, Student Internship, Western BSc student Gabriela Robles Ospina, Mapping Canadian High Arctic periglacial and glacial features

05/20–08/20 Mentor, Student Internship, Western BSc student Alyssa Coelho, Mapping Canadian High Arctic periglacial and glacial features

09/19–12/19 Mentor, Student Internship, Western BSc student Rhiannon Punch, Mapping Canadian High Arctic periglacial and glacial features

05/19–08/19 Mentor, Student Internship, Western BSc student Anthony Dicecca, GPR and sieve analyses of Canadian High Arctic ice-wedge polygons

01/19–06/19 Mentor, Online Research Co-op Program, High School student Aodhán Corrigan, Gow Lake impactite geochemistry

Peer-reviewed Publications

Hibbard, S. M., Williams, N. R., Golombek, M. P., Osinski, G.R., and Godin, E., 2021. Evidence for Widespread Glaciation in Arcadia Planitia, Mars. *Icarus* 359. https://doi.org/10.1016/j.icarus.2020.114298.

Hibbard, S. M., Osinski, G. R., and Godin, E., 2021. Vermicular Ridge Features on Dundas Harbour, Devon Island, Nunavut. *Geomorphology*, 395. https://doi.org/10.1016/j.geomorph.2021.107947.

Hibbard, S. M., Osinski, G. R., Godin, E., Andres, C., Kukko, Chartrand, S., Grau Galofre, A., Jellinek, A. M., Boucher, W. Glacial Ring Ridges near Mokka Fjord, Axel Heiberg Island, Nunavut, Canada. *In Review in The Cryosphere.*

Hibbard, S. M., Neish, C., Perkins, R., Hamilton, C., Voigt, J.R., Carr, B. B. Ground-penetrating radar observations of sand-mantled lava flows: Implications for radar remote sensing of Mars. *In Preparation for Planetary Science Journal.*

Hibbard, S. M., Osinski, G. R., Kukko, A., Boucher, W., Godin, E., Grau Galofre, A., Chartrand, S., Jellinek, A. M., Andres, C. Glacial Ring Ridges Across Axel Heiberg Island, Nunavut, Canada: Implications for a High Arctic Holocene Glacial Environment. *In Preparation for The Cryosphere.*

Hibbard, S. M., Sion, B. D., Peters, J., Sabol, D., Houseman-Lehman, S., Bieszczad, J., Eylander, J. Field validation of GeoWATCH soil moisture downscaling model: Implications for soil strength predictions and cross-country mobility. *In Preparation for GSA Special Issue Military Geosciences: Past Lessons and Modern Challenges.*

Becerra, P., Smith, I. B., **Hibbard, S.**, Andres, C., Bapst, J., Bramson, A., Buhler, P., Coronato, A., Diniega, S., Emmett, J., Grau Galofre, A., Herny, C., Kahre, M., Knightly, J. P., Nerozzi, S., Pascuzzo, A., Portyanikna, G., Rabassa, J., Tamppari, L., Titus, T., Whitten, J., Yoldi, Z., 2021. Past, Present and Future of Mars Polar Science: Outcomes and outlook from the 7th International Conference on Mars Polar Science and Exploration. Planetary Science Journal, 2, 209. https://doi.org/10.3847/PSJ/ac19a5.

Chartrand, S. M., Jellinek, A. M., Kukko, A., Grau Galofre, A., Osinski, G. R., and **Hibbard, S.**, 2023. High Arctic channel incision modulated by climate change and the emergence of polygonal ground. Nature Communications, 14.

Eschenfelder, J., **Hibbard, S.,** Chartrand, S., and Knightly, P. pyAPDT: An adaptive polygon detection tool. *Submitted to The Journal of Open Source Software.*

Golombek, M., **Hibbard, S.**, Bloom, C., Deahn, M., Warner, N., Williams, N., Daubar, I. J., Hundal, C. B., Lagain, A., Piquoux, S., Edwards, C. Corinto: A Young, Extensively Rayed Crater that Produced a Billion Secondaries on Mars. *In Review in Icarus.*

Hamilton, C. W., Voigt, J. R. C., Neish, C. D., **Hibbard, S. M.**, Carr, B. B., Hadland, N. The Holuhraun region of Iceland as a high-fidelity planetary analog site: Analogical reasoning and practical applications. *In Preparation for Planetary Science Journal.*

Osinski, G. R., Grieve, R. A., Ferrière, L., Losiak, A., Pickersgill, A., **Hibbard, S.**, Hill, P., Jaimes Bermudez, J., Marion, C., Newman, J., Simpson, S., 2022. Impact Earth: A review of the terrestrial impact record. *Earth-Science Reviews.* https://doi.org/10.1016/j.earscirev.2022.104112

Perkins, R. P., Neish, C. D., **Hibbard, S. M.**, Hamilton, C. W. Radar observations of sediment mantling along the northern margin of the 2014–2015 Holuhraun lava flow-field: Implications for buried lava flows on Mars. *In Preparation for Planetary Science Journal.*

Voigt, J. R. C., Hamilton, C. W., Stack, K. M., **Hibbard, S. M.** The 2014–2015 Holuhraun Lava Flow-Field in Iceland as a Planetary Analog Site for Young Volcanic Terrains in Elysium Planitia, Mars. *In Preparation for Planetary Science Journal.*

White Papers and Mission Reports

Bramson, A. M., Andres, C., Bapst, J., Becerra, P., Courville, S. W., Dundas, C. M., **Hibbard, S. M.**, Holt, J. W., Karunatillake, S., Khuller, A., Mellon, M. T., Morgan, A. G., Obbard, R. W., Perry, M. R., Peterson, E. I., Putzig, N. E., Sizemore, H. G., Smith, I. B. Stillman, D. E.,

Wooster, P., 2020. Mid-Latitude Ice on Mars: A Science Target for Planetary Climate Histories and an Exploration Target for In Situ Resources. Bulletin of the American Astronomical Society, 53, 4, Whitepaper #115, Planetary Science and Astrobiology Decadal Survey 2023-2032, https://doi.org/10.3847/25c2cfeb.cc90422d.

Grau Galofre, A., Andres, C., Becerra, P., Bhardwaj, A., Bramson, A., Butcher, F., Christensen, P R., Conway, S. J., Coronato, A., Hauber, E., **Hibbard, S.**, Knightly, J. P., Meng, T., Osinski, G., Peterson, E., Plaut, J., Rabassa, J., Rutledge, A., Sam., L., Serla, J., Whipple, K., 2020. A Comparative View of Glacial and Periglacial Landforms on Earth and Mars. Bulletin of the American Astronomical Society, 53, 4, Whitepaper #101, Planetary Science and Astrobiology Decadal Survey 2023-2032, https://doi.org/10.3847/25c2cfeb.421a94c3.

International Mars Ice Mapper (I-MIM) Reconnaissance/Science Measurement Definition Team (MDT) Final Report. Submitted to I-MIM Agency Partners (Agenzia Spaziale Italiana, Canadian Space Agency, Japan Aerospace Exploration Agency, National Aeronautics and Space Administration, and Netherlands Space Office)

Conference Abstracts

2024

Hibbard, S.M., 2024. Terrestrial Brain Terrain Analogues and Their Implications for Mars Climate: An Update Since ICMPSE2020. In *Eighth International Conference on Mars Polar Science and Exploration.*

2023

Hibbard, S.M., Perkins, R., Neish, C.D., and Hamilton, C.W., 2023. A Case Study for International Mars Ice Mapper (I-MIM): Ground-Truthing Synthetic Aperture Radar of a Sand-covered Lava Flow. In *CryoMars2023.*

Hibbard, S.M., Chartrand, S., Eschenfelder, J., Knightly, P., Kukko, A., and Osinski, G.R., 2023. Polygon Morphometric Investigations Across Devon Island, Nunavut, Canada with Implications for Mid latitude Mars Ice. In *CryoMars2023.*

Hibbard, S.M., Chartrand, S., Eschenfelder, J., Knightly, P., Kukko, A., and Osinski, G.R., 2023. Comparative Morphologic Investigation of Polygons on Devon Island, Arctic Canada, with Implications for Mars Ice Accessibility. In *Lunar and Planetary Science Conference #54, Abstract #2692.*

Hibbard, S.M., Perkins, R., Neish, C.D., and Hamilton, C.W., 2023. Ground-truthing Satellite Synthetic Aperture Radar Data of a Sand-covered Lava Flow. In *Lunar and Planetary Science Conference #54, Abstract #2455.*

Hamilton, C.W., Voigt, J.R.C., Zanetti, M., **Hibbard, S.M.**, Bremner, P.M., Schroedl, P., and Neish, C.D., 2023. The Holuhraun region of Iceland as a high-fidelity planetary analog site for robotic and human exploration. In *Lunar and Planetary Science Conference #54, Abstract #3010.*

Russo, F.P., Trussell, A., Brooks, C.L., Williams, N.R., Golombek, M.P., Calef III, F.J., Do, S., Lethcoe, H., Cameron, and **Hibbard, S.**, 2023. Mapping Rock Heights for the Landing Site and Depot Sites in Three Forks, Jezero Crater for Mars Sample Return. In *Lunar and Planetary Science Conference #54, Abstract #2631.*

Shah, J., Carr, B.B., Hadland, N., Varnam, M., Voigt, J.R.C., Basu, U., Björnsson, B., Chen, C., Dong, E., Graff, J., **Hibbard, S.M.,** Moersch, J.E., Philips, M., Springer, J., Neish, C.D., and Hamilton, C.W., 2023. Evaluating the use of Unoccupied Aircraft Systems (UAS) for Planetary Surface Exploration in Analog Terrain. In *Lunar and Planetary Science Conference #54, Abstract #1732.*

Williams, N.R., Golombek, M.P., Do, S., Calef, F., Lethcoe, H., Cameron, M., Trussell, A., Brooks, C., Russo, F., Deahn, M., Morris, M., **Hibbard, S.**, Heverly, M., Spencer, D., Fosse, E., and Maki, J., 2023. Mars Sample Return "Three Forks" Landing and Depot Site Selections. In *Lunar and Planetary Science Conference #54, Abstract #2618.*

Zanetti, M., Neish, C.D., Miller, K., Bremner, P., Hayward, E., Adams, M., Perkins, R., Vanga, S., **Hibbard, S.M.**, and Hamilton, C.W., 2023. Application of Mobile LiDAR for Ultra-High Resolution and GPS-Denied Terrain Mapping in Planetary Analog Environment. In *Lunar and Planetary Science Conference #54, Abstract #2775.*

2022

Hibbard, S.M., Osinski, G., Godin, E., Williams, N., and Golombek, M., 2022. Earth analogue implications for brain terrain formation on Mars. In *Lunar and Planetary Science Conference #53, Abstract #2551*.

Hibbard, S.M., Osinski, G., Godin, E., Williams, N., and Golombek, M., 2022. Brain Terrain Formation on Earth and Mars. In *Geological Society of America Connects 2022, Abstract # 378573.*

2021

Hibbard, S., Osinski, G., Williams, N., Golombek, M., Godin, E., 2021. Implications for the distribution of brain terrain in Arcadia Planitia, Mars. In *Regional Conference on Permafrost & 19th International Conference on Cold Regions Engineering.*

2020

Hibbard, S.M., Osinski, G.R., and Godin, E., 2020. Brain-like Ridges in the Canadian High Arctic. In *NSERC PermafrostNet AGM 2020.*

Hibbard, S.M., Osinski, G.R., Godin, E., and Kukko, A., 2020. Terrestrial Brain Terrain and the Implications for Martian Mid-Latitudes. In *Seventh International Conference on Mars Polar Science and Exploration, Abstract #6023.*

Hibbard, S.M., Osinski, G.R., Kukko, A., Godin, E., Chartrand, S., Grau, A., Jellinek, M., and Andres, C., 2020. Polygons Overlying Massive Ice: A Canadian High Arctic Analogue. In *Lunar and Planetary Science Conference #51, Abstract #2029.*

Newman, J. D.; Pilles, E. A., Morse, Z. R., Marion, C. L., Christoffersen, P. A., Hill, P. J. A., Osinski, G. R.; Cloutis, E. A.; Andres, C. N., Bourassa, M., Caudill, C. M., Cross, M., Dicecca, A.,

Doerksen, K., **Hibbard, S.**, Hopkins, R., Kollewyn, J., Pascual, A., Ratcliffe, K., Roberts, A. Rodriguez Sanchez-Vahamonde, C. D., Ryan, C., Shah, J., Tolometti, G., Tornabene, L. L., Vlachopoulos, O., 2020. Planning Team Operations for the CanMoon Lunar Sample Return Analogue Mission. In *Lunar and Planetary Science Conference #51*, Abstract #2196.

Osinski, G.R., Godin, E., Andres, C., Chartrand, S., Grau Galofre, A., Harrison, T., **Hibbard, S**., Jellinek, M., Kukko, A., Pontefract, A., Thomson, L., and Zanetti, M., 2020. Gully Formation at the Haughton Impact Structure (Arctic Canada) Through the Melting of Snow and Ground Ice, with Implications for Gully Formation on Mars. In *Lunar and Planetary Science Conference #51, Abstract #1418*.

2019

Hibbard, S.M. and Osinski, G.R., 2019. Brain Terrain on Earth? A Potential Periglacial Analogue in the Canadian High Arctic. In *Lunar and Planetary Science Conference #50, Abstract #2126*.

2018

Hibbard, S.M., Osinski, G.R., and Tornabene, L.L., 2018. Crater-Related Surface Morphologies of the Ikapati Crater, Ceres. In *Lunar and Planetary Science Conference #49, Abstract #2761*.

Hibbard, S.M., Williams, N.R., Golombek, M.P., and Osinski, G.R., 2018. Evidence for Flow in Buried Ice in the Mid-Latitudes of Arcadia Planitia. In *Lunar and Planetary Science Conference #49, Abstract #2606*.

2017

Hibbard, S.M. and Davatzes, A.K., 2017. Trace Element Geochemistry of Compositionally Layered Impact Spherules. In *Lunar and Planetary Science Conference #48, Abstract #2322*.

Schmieder, M., Boschi, S., Caudill, C., Chandnani, M., DiFrancesco, N.J., **Hibbard, S.M.**, Hughson, K., Kinczyk, M., Martin, A.C., Martin, E. and Martinot, M., 2017. Mapping Ejecta on the East and Southeast Side of Barringer Meteorite Crater (aka Meteor Crater), Arizona. In *Lunar and Planetary Science Conference #48, Abstract #*2180.

Williams, N.R., **Hibbard, S.M.**, and Golombek M.P., 2017. Implications of Surface Morphologies for the Distribution of Shallow Subsurface Ice in Arcadia Planitia, Mars. *In AGU Fall Meeting Abstracts.*

Williams, N.R., **Hibbard, S.M.**, and Golombek M.P., 2017. Crenulated "Brain Terrain" in Arcadia Planitia, Mars. *In AGU Fall Meeting Abstracts.*

Field Experience

Iceland — Conducted field work for my postdoctoral work regarding periglacial Earth-Mars analogues and RAVEN mission participation using ground-based techniques to calibrate satellite-based techniques to study buried objects. Led field work aimed at characterizing the surface and subsurface link between near-relict periglacial landforms and a changing environment.

Arctic	Conducted field work for my Ph.D. thesis and postdoctoral work regarding periglacial Earth-Mars analogues on Devon Island and Axel Heiberg Island, Nunavut, Canada.
Sudbury	Participated in field school with University of Western Ontario and LPI regarding impact processes, complex crater formation and ejecta distribution.
Arizona	Participated in field school with LPI regarding impact processes, simple crater formation and ejecta distribution at Barringer crater.
South Africa	Conducted field work for my Masters thesis regarding Precambrian impact ejecta produced by impact-derived vapor plumes by collecting samples containing spherules in Barberton, South Africa.
Antarctica	Assisted in research regarding ancient buried ice and paleo-landscape change by performing EM surveying across rugged terrain, and collecting soil and ice samples in Garwood Valley, Taylor Valley, and Victoria Valley, Antarctica
Austria	Assisted in research regarding proglacial sediment budget and landscape change in response to climate change by stream gaging and using LiDAR in Feichten im Kaunertal, Öztal Alps, Austria.
Norway	Assisted in research regarding rockfall age-dating using a dating tool called the Schmidt Hammer in Jotunheimen National Park, Norway.
New Zealand	Assisted in research regarding end moraine age-dating using a dating tool called the Schmidt Hammer in Mount Cook National Park, New Zealand.
San Salvador	Participated in a course regarding carbonate depositional environments on San Salvador Island, Bahamas.
Utah	Participated in field camp with The Ohio State University in Ephraim, Utah. Also participated in planetary surface processes field camp with the University of Western Ontario.

Certifications and Licenses

- Canadian Red Cross Wilderness and Remote First Aid (WRFA)
- Possession and Acquisition License (PAL)

Community Outreach and Volunteer Work

06/19–08/21	Friendly Visitor, Children's Aid Society of London & Middlesex, Ontario, CA
01/19–06/19	Research Mentor, Online Research Co-op Program, The Foundation for Student Science & Technology, London, Ontario, CA

Highlights in the News

CBC News	Newly discovered glaciers on Mars may help humans settle on the Red Planet one day
Western University	Newly discovered 'glaciers' could aid human survival on Mars
Tom McConnell Show	Shannon Hibbard, Glaciers on Mars
CBC Canada Tonight	Newly discovered underground glaciers on Mars... right where we want them
LiveScience	Possible new type of glacier just discovered on Mars
New York Daily News	Study: Newly revealed Mars glacier could support human exploration
GlacierHub	Can a New Type of Glacier on Mars Aid Future Astronauts?
Western University	Western planetary scientists assist in capturing first full-colour image of NASA InSight using HiRISE space camera
Western University	International collaboration advances drones as next big step in planetary exploration
NASA Science	Joint ASI/CSA/JAXA/NASA Measurement Definition Team for the International Mars Ice Mapper Mission
Temple University	30 Under 30 Award: Research and Technology Innovator: Shannon Hibbard