
DIANA VALENCIA

CURRICULUM VITAE

A. BIOGRAPHICAL INFORMATION

1. PERSONAL

Name: Diana Valencia

Citizenship: Canadian / Colombian

Physics and Astrophysics Group
Department of Physical and Environmental Sciences
University of Toronto at Scarborough
1265 Military Trail
Scarborough ON M1C 1A4
416-289-2986
Research Homepage: www.astro.utoronto.ca/~valencia

2. DEGREES

Ph.D. Harvard University, Department of Earth and Planetary Sciences — 2008

“Internal Structure and Thermal State of Super-Earths”
Directed by Richard J. O’Connell and Dimitar D. Sasselov

M.Sc. University of Toronto, Physics Department — 2002

“Estimating Love Numbers from Long Period Seismic Data”
Directed by Jerry X. Mitrovica

B.Sc. (Honours) University of Toronto, Physics Department — 2001

High Distinction

3. EMPLOYMENT HISTORY

Associate Professor, University of Toronto, Scarborough

Jan 2013 - current
Department of Physical and Environmental Sciences
Toronto, ON, Canada

Associate Professor, University of Toronto, St. George

Jan 2013 - current
Graduate Unit Astronomy Department
Toronto, ON, Canada

Sagan NASA Postdoctoral Fellow, Massachusetts Institute of Technology

Feb 2011 - Dec 2012
Department of Earth, Atmosphere and Planetary Sciences
Cambridge, MA, USA

Henri Poincare Postdoctoral Fellow, Observatoire de la Côte d’Azur

Oct 2008 - Nov 2010
Planetology Group
Nice, France

4. ACADEMIC HONOURS & AWARDS (2000-PRESENT)

2019 – 2024. **Early Research Award**, Ontario Government. This is a competitive award given by the province to scientists within 10 years of their PhD graduation in any discipline for their valuable contributions and research promise. Value: \$150K

- 2019 – 2021. **Visiting Scholar**, Planet S initiative of the National Center of Competence in Research, Switzerland, awarded by the Swiss National Science Foundation
- 2017 – 2019. **Mercator National Fellow**, Matter under Planetary Interior Conditions, Germany, awarded by the German Research Foundation. I was chosen to be the first recipient of this international award.
- 2005 – 2008. **Origins of Life Postdoctoral Fellow**, Department of Earth and Planetary Sciences, Harvard University
- 2005 – 2008. **Origins of Life Graduate Fellow**, Department of Earth and Planetary Sciences, Harvard University
2005. **Stickney Fellowship**, Department of Earth and Planetary Sciences, Harvard University
2001. **Dean's List Award**. University of Toronto.
2001. **Don Salt Award**, given by the Canadian Exploration Geophysics Society
2000. **Canadian Society of Exploration Geophysics Award**, University of Toronto

5. PROFESSIONAL AFFILIATIONS AND ACTIVITIES

SERVICE ROLES IN PROFESSIONAL SOCIETIES:

Scientific Organization Committee Member, Extreme Solar Systems IV (2019 & 2015). Most important international conference in Exoplanets happening every 4 years. Responsibilities include ranking 500+ abstracts, providing feedback with scheduling and organization, and being a session chair.

Session Chair and Organizer, Super-Earths, 54th Annual Meeting American Geophysical Society (2008). Proposed, organize and chaired the first AGU session on super-Earths (oral and poster sessions), attended by 100+ people.

SERVICE ROLES IN PROFESSIONAL SOCIETIES:

Core Science Team Member, Near InfraRed Planet Searcher [NIRPS] (2018 - present). Canadian Instrument for the ESO Telescope capable of measuring the masses of exoplanets. I am the in-house theoretician in charge of providing the theoretical motivation for selection of targets and observing time determination, as well as analyzing and interpreting data for each planet and as a population. Expected to be online in summer 2020.

Consortium Member, Atmospheric Remote-sensing Infrared Exoplanet Large-survey [ARIEL] Telescope (2018 - present). European Space Mission M4 class. My role is to provide the theoretical motivation for target selection and interpretation of atmospheric composition of the low-mass ARIEL exoplanets. (only 3 in Canada)

Co-Investigator, SPIRou (A Near-infrared Spectropolarimeter) (2018 - present) for the Canadian-France-Hawaii Telescope.

REVIEW ACTIVITY

Reviewer for the following international journals:

Science	Icarus
Nature Geoscience	Astronomy and Astrophysics
Nature Astronomy	Astrophysical Journal Letters
Astrophysical Journal	Geology
Earth and Planetary Sciences Letters	Astrobiology
Monthly Notices of the Royal Academy of Sciences	

Reviewer/panelist for the following granting agencies and observing facilities:

James Webb Space Telescope
(panelist Cycle 1 2020)

Hubble Space Telescope
(chair panelist 2019, panelist 2014)

United States-Israel Bi-National Science
Foundation

Gemini Telescope

Deutsche Forschungsgemeinschaft (German Research
Foundation)

Reviewer of the following Textbook Chapter:

- C. Sotin, M.M. Jackson and S. Seager. Terrestrial Planet Interiors. *Exoplanets*. S. Seager, eds. University of Arizona Press. (2010)

MEMBER OF THE FOLLOWING PROFESSIONAL SOCIETIES:

- (1) American Astrophysical Society, Division of Planetary Sciences
- (2) American Geophysical Society
- (3) American Physics Society

B. ACADEMIC HISTORY

6.A. RESEARCH ENDEAVOURS

The goal of my research is to understand the interior structure, thermal evolution and formation of super-Earths and mini-Neptunes. My work incorporates geophysical and astrophysical concepts to examine how composition constraints formation theories, how the coupling of the interior dynamics to the atmosphere of solid planets determines the pathways to habitability, and how volatile accretion and loss processes in planetesimals set the water and carbon content of planets.

My current research builds upon my pioneering work on: (1) The internal structure of super-Earths where I showed how radius scales with mass for solid planets, and quantified the degeneracy in composition — work that has been used as a foundation to interpret observational data and examine the properties of these planets; and (2) the interior dynamics of super-Earths where I proposed these planets could exhibit plate tectonics — work that has inspired a suite of geodynamic studies in exoplanets by both established and emerging geophysicists.

6B. FUNDING HISTORY

Principal applicant/investigator(s) in bold

Applicants	Title/ Position	Funding Agency	Amount	Year awarded (duration)
Valencia, D.	<i>Thermochemical Evolution and Formation of SuperEarths and MiniNeptunes</i>	NSERC, Discovery Grant	\$170K	May 2021 - April 2026
Valencia, D.	<i>Habitability of Super-Earth Planets around M dwarfs</i>	<i>Early Research Award</i> , Ontario Government	\$150K	May 2019 - April 2024
Valencia, D. A. Morbidelli	<i>Compositional Diversity of Rocky Planets after Collisional Accretion</i>	France-Canada Research Fund	\$14.5K	May 2019 - April 2021
Valencia, D.	<i>Understanding Habitable Planets</i>	<i>Connaught Award</i> , University of Toronto	\$20K	May 2019 - April 2022
Valencia, D.	<i>Formation and Evolution of Super-Earths and Sub-Neptunes</i>	NSERC, Discovery Grant	\$135K	May 2014 - April 2021

Valencia, D.	<i>International Research Collaboration Fund</i>	University of Toronto, Scarborough	\$2K	May 2019 - April 2020
Valencia, D.	<i>Postdoctoral Fellowship held at Massachusetts Institute of Technology</i>	NASA Sagan Postdoctoral Fellowship Program	US\$67K/y	Jan 2011 - Dec 2012
Valencia, D.	<i>Postdoctoral Fellowship at Observatoire de la Cote d'Azur</i>	French Government	€27.5K/y	Oct 2008 - Nov 2010
Valencia, D.	<i>NSERC Summer Research Award</i>	NSERC Canada	\$8K/yr	2000 & 2001

6C. OTHER GRANT/RESOURCE ALLOCATION HISTORY

Principal applicant/investigator(s) in bold

Applicants	Title/ Position	Funding Agency	Amount	Year awarded (duration)
Valencia, D.	<i>Chemical Formation of Super-Earths and the Terrestrial Planets</i>	Compute Canada	60 core-years	Apr 2020 - Mar 2021

C. SCHOLARLY AND PROFESSIONAL WORK

7. REFEREED PUBLICATIONS (29)

For multi-authored contributions:

Valencia and trainees are bolded with *graduate students or *post-doctoral fellows starred, **undergraduates** underlined

h-index 22, i10-index 28, citations 3149

since 2015: h-index 19, i10-index 25, citations 1938 (per google scholar)

7A. ARTICLES PUBLISHED (29)

- [26] **Plotnykov, M.***, & **D. Valencia** (2020). Chemical Fingerprints of Formation in Rocky Super-Earths' Data. MNRAS. 499, 932-947
- [25] **Scora, J.***, **D. Valencia**, A. Morbidelli, S. Jacobson (2020). Chemical Diversity of Super-Earths as a Consequence of Formation. MNRAS, 493,4910-4924
- [24] **A Paradise***, K Menou, **D. Valencia**, C. Lee (2019). Temperate Land Conditions, Liquid Water, and Implications for CO2 Weathering, JGR planets, 124, 2087-2100
- [23] **D. Valencia**, **E. Paracha**, **A. P. Jackson*** (2019). Can a Machine Learn the Outcome of Planetary Collisions. ApJ, 882, 35 (11p)
- [22] **A. Silburt**, **M. Ali-Di***, C. Zhu, A. P. Jackson, **D. Valencia**, Y. Kissin, D. Tamayo, K. Menou (2019). Lunar Crater Identification via Deep Learning. Icarus, 317, 27-38.
- [21] **D. Valencia**, **V. Tan**, **Z. Zajac** (2018). Habitability from Tidally-Induced Tectonics. ApJ, 857, 2.
- [20] **M. Pu**, **D. Valencia** (2017). Ohmic Dissipation in Mini-Neptunes. ApJ, 846, 47 (12pp).
- [19] **D. Tamayo***, **A. Silburt***, **D. Valencia**, et al (2016). A machine learns to predict the stability of tightly packed planetary systems. ApJL, 832, L22 (5pp).

- [18] **R. Cloutier***, **D. Tamayo***, **D. Valencia** (2015). Could Jupiter or Saturn have ejected a fifth planet? *ApJ*, 813, 8 (11p).
- [17] **Van Grootel, V.**, M. Gillon, **D. Valencia**, N. Madhusan, D. Dragomir, A.R. Howe, A.S. Burrows, B.-O. Demory, D. Deming, d. Ehrenreich, C. Lovis, M. Mayor, F. Pepe, D. Queloz, R. Scudlaire, S. Seager, D. Segransan, S. Udry (2014). Transit confirmation and improved stellar and planet parameters for the super-Earth HD 97658 b and its host star. *ApJ*, 786:2 (11pp).
- [16] **Valencia, D.**, T. Guillot, V. Parmentier*, Freedman (2013). Bulk Composition of GJ 1214b and other sub-Neptune exoplanets. *ApJ*, 775, 10-
- [15] Tackley, P. J., M. Ammann, J. P. Brodholt, D. P. Dobson and **D. Valencia** (2013) Mantle dynamics in super-Earths: Post-perovskite rheology and self-regulation of viscosity, *Icarus* 225(1), 50-61.
- [14] Gillon, M., B. O. Demory, B. Benneke, **D. Valencia**, D. Deming & 6 more authors (2012). Improved precision on the radius of the nearby super-Earth 55 Cnc-e. *A&A*, 539, A28.
- [13] Demory, B. O., M. Gillon, D. Deming, **D. Valencia**, S. Seager & 10 more authors (2012). Detection of a transit of the super-Earth 55 Cnc-e with warm Spitzer. *A&A*, 533, A114.
- [12] Leger, A., M. Fontcave, A. Labeyrie, B. Samuel, O. Demangeon, and **D. Valencia**. Is the Presence of Oxygen on an Exoplanet a Reliable Biosignature? *Astrobiology*, 11, 4.
- [11] Hatzes, A. P., M. Fridlund, G. Nachmani, T. Mazeh, **D. Valencia**, & the CoRoT team (2011). The Mass of CoRoT-7b. *ApJ*, 743, 45-55.
- [10] Havel M., T. Guillot, **D. Valencia**, & A. Crida. (2011) The multiple planets transiting Kepler-9: Inferring stellar properties the planetary compositions. *A&A*, 531, A3.
- [9] Morard, G., J. Bouchet, **D. Valencia**, S. Mazevet & F. Guyot (2011). The melting curve of iron at extreme pressures: Implications for planetary cores. *High Energy Phys*, 7, 141-144.
- [8] **Valencia, D.**, M. Ikoma, T. Guillot & N. Nettelmann (2010). Composition and Fate of short-period Super-Earths: The case of CoRoT-7b. *A&A*, 516, A20.
- [7] **Valencia, D.** & R. J. O'Connell (2009). Convection scaling and subduction on Earth and super-Earths. *EPSL*, 286, 492-502.
- [6] **Valencia, D.**, R. J. O'Connell & D. D. Sasselov (2009). The role of high-pressure experiments on determining super-Earth properties. *Astrophys. & Space Sci.*, 322: 135-139.
- [5] Fortney, J. J, S. Glenzer, M. Koenig, B. Militzer, D. Saumon & **D. Valencia** (2008). Frontiers of the Physics of Dense Plasmas and Planetary Interiors: Experiment, Theory, Applications. *Physics of Plasmas Review*. 16: 041003-041003-7.
- [4] **Valencia, D.**, R. J. O'Connell & D. D. Sasselov (2007). Inevitability of Plate Tectonics on Super-Earths. *ApJ*, 670, L45-L48.
- [3] **Valencia, D.**, D. D. Sasselov & R. J. O'Connell (2007). Detailed models of super-Earths: How well can we infer bulk properties? *ApJ*, 665: 1413-1420.
- [2] **Valencia, D.**, D. D. Sasselov & R. J. O'Connell (2007). Radius and Structure Models for the First Super-Earth Planet, *ApJ*, 656: 545-551.
- [1] **Valencia, D.**, R. J. O'Connell & D. D. Sasselov (2006). Internal Structure of Massive Terrestrial Planets, *Icarus*, 181: 545-554.

LARGE COLLABORATIONS (3)

- [5] Teske, J. including **D. Valencia** (2021). The Magellan-TESS Survey I: Survey Description and Mid-Survey Results. *ApJ*. In review
- [4] Helled, R., et al. including **D. Valencia** (2021). Ariel Planetary Interiors White Paper. *Exp. Astron.* In review

- [3] Tinetti, G., et al. including **D. Valencia** (2018). A chemical survey of exoplanets with ARIEL. *Exp. Astron.*, 46, 135-209.
- [2] Bouchi, F., et al. including **D. Valencia** (2017). Near-Infrared Planet Searcher to Join HARPS on the ESO 3.6-meter Telescope, *The Messenger*, 169, 21-27
- [1] Rauer, H., et al. including **D. Valencia** (2014). The Plato 2.0 Mission. *Exp. Astron.*, 38, 249-330.

7B. BOOKS & BOOK CHAPTERS (3)

- [3] Nettelmann, N. and **D. Valencia**. Planetary Interiors. In *ExoFrontiers*, ed. N. Madhusudhan, in press
- [2] **Valencia, D.** Composition and Internal Dynamics of super-Earths (2013). In *Physics and Chemistry of the Deep Earth*, ed. J. Karato. Wiley-Blackwell, 479p.
- [1] **Valencia, D.** Interior of Exoplanets. Editor. Book commissioned by the American Astronomical Society (AAS) via IOP Publishing Company. In preparation

8. NON-REFEREED PUBLICATIONS (7)

WHITE PAPERS AND OUTREACH ARTICLES

- [8] Tinetti, G. et al. including **D. Valencia** (2021). Ariel: Enabling planetary science across light-years. White Paper
- [7] Guillot, T. et al. including **D. Valencia** (2020). Keys of a Mission to Uranus or Neptune, the Closest Ice Giants. White Paper
- [6] Sasselov, D. & **D. Valencia** (2011). Planets we could call home. *Scientific American*, Aug 2011.
- [5] **Valencia, D.** Alternate Earths: evolution of planetary interiors and their surfaces (2010). In *Geodynamics White Paper for NSF*.

CONFERENCE PROCEEDINGS

- [4] **Valencia, D.** Composition of Transiting and Transiting only Super-Earths (2011). *IAU 276 Proceedings: The Astrophysics of Planetary Systems: Formation, Structure and Dynamical Evolution*.
- [3] **Valencia, D.** Characterising Super-Earths (2011). *Detection and Dynamics of Transiting Exoplanets*, St. Michel l'Observatoire, France, Edited by F. Bouchy, R. Diaz, C. Moutou. *EPJ Web of Conferences*, vol 11
- [2] **Valencia, D.**, R. J. O'Connell & D. D. Sasselov (2007). Super-Earths' Evolution: Towards Habitability, in *Proceedings ASP Conference, Extreme Solar Systems Symposium, Santorini, Greece*.
- [1] **Valencia, D.**, D. D. Sasselov & R. J. O'Connell (2006). Structure of First Super-Earth Planet, in *Proceedings, Rencontres de Blois - Planetary Science: Challenges and Discoveries Conference, 18th, Blois, France*.

9.A MANUSCRIPTS SUBMITTED OR NEAR SUBMISSION (1)

- [1] **Valencia, D.**, D. Tamayo. Asynchronous Rotation From Exotic Climates. In Prep

10. CONFERENCE AND SYMPOSIUM PRESENTATIONS

MY CONTRIBUTIONS (37 INVITED, 7 CONTRIBUTED)

I have given 23 presentations since starting at the University of Toronto, from those 21 have been invited talks. As a measure of my impact, I am regularly invited to give an overview of the field in both planetary interiors and

habitability to both astronomers and geophysicists. Thanks to my pioneering work and expertise on planetary interiors I am regularly invited to inform the mineral physics community on the laboratory studies needed to enhance our planetary understanding (e.g. Invited Keynote session speaker at American Physical Society). Finally, my work has been selected for oral contributions at every conference of the “Extreme Solar Systems” Series which is the most influential conference in exoplanet sciences which happens every four years. Starting as a graduate student (EESI 2007), postdoctoral fellow (EESII 2011), junior faculty (EESIII 2015) and recently as faculty adviser with my student presenting (EESIV 2019).

- [46] **Invited Talk.** ‘Matter Under Extreme Conditions’ Seminar, Bad Honnef, Germany, Oct 2020. Declined due to pandemic
- [44] **Invited Review Talk.** “Tectonics and Climate of Super-Earths”, From Protoplanetary Disks to Planetary Systems Architecture to Planetary Atmospheres and Habitability, Planet2/RESCEU Symposium 2019, Okinawa, Japan
- [43] **Contributed Poster.** “Compositions of Super-Earths as a Signature of Planet Formation”, Goldschmidt Conference, Aug 20 2019, Barcelona, Spain
- [42] **Invited Keynote Session Talk.** “Material Properties of Super-Earths and mini-Neptunes”, American Physical Society 2019 Meeting, Mar 2019, Boston, MA, USA
- [41] **Invited Talk.** “Forming iron-rich and iron-poor Super-Earths”, Planet Formation and Evolution Conference, University of Rostock, Feb 2019, Rostock, Germany
- [40] **Contributed Talk.** “Long-Term Climate Stability”, NASA Sagan Symposium, Nexsci California Institute of Technology, Nov 9 2018, Los Angeles, CA, USA
- [39] **Invited Talk.** “Super-Earths Composition: Planet Formation Signatures”, 42nd COSPAR Scientific Assembly, July 18 2018, Los Angeles, MA, USA
- [38] **Invited Talk.** “Habitability from Tidally Induced Tectonics”, Study of the Earth's Deep Interior Symposium, committee of the International Union of Geodesy and Geophysics, July 13 2018, Edmonton
- [37] **Invited Talk.** “Tidally Driven Habitability”, Franco Australian Astrobiology and Exoplanet Workshop, Australian National University, Dec 20/2017, Canberra, Australia
- [36] **Invited Chair Talk.** “Constraints On Terrestrial And Super-Earth Composition”, The Origin of Volatiles in Habitable Planets: The Solar System and Beyond Conference. Michigan University, Oct 2017. Michigan, USA
- [35] **Invited Talk.** “Interior of Super-Earths and Mini-Neptunes”. Ariel Space Mission Conference, Nov 22 2016. Brussels
- [34] **Invited Talk.** “Roadmap to Characterising Habitable Planets”. Universidad de Los Andes, Oct 14 2016. Bogota, Colombia
- [33] **Invited Keynote Talk.** “Roadmap to Characterising Habitable Planets”. Astronomy International Union, Latin American Regional International Meeting, Oct 6 2016. Cartagena, Colombia
- [32] **Contributed Talk.** “Ohmic Dissipation in Mini-Neptunes”, Extreme Solar Systems Conference III, Nov 2015. Hawaii, USA
- [31] **Invited Talk.** Comparative Tectonics and Geodynamics of Venus, Earth and Rocky Exoplanets, Caltech University, May 2015. Pasadena, CA, USA (declined due to maternity leave)
- [30] **Invited Talk.** Atmosphere Science in the Context of CHEOPS, TESS, K2 and PLATO Conference, DLR Institute, March 5th 2015. Berlin, Germany (declined due to maternity leave)
- [29] **Invited Talk in Plenary Session.** “Rocky super-Earths: variety in composition and energy budget”, Session: Upstairs Downstairs: Consequences of Internal Evolution for the Habitability of Planetary Surfaces, American Geophysical Union Conference, Dec 2014. San Francisco, CA, USA

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- [28] **Invited Talk.** “Interior Dynamics and Outgassing in Tidally-heated Rocky Super-Earths”, Session: From Core to Crust, the Evolution of Planetary Interiors II, American Geophysical Union Conference, Dec 2014. San Francisco, CA, USA
 - [27] **Invited Talk.** “From Earth to Super-Earths (and Beyond)”, Rickfest Symposium, Earth and Planetary Sciences Department, Harvard University, Sept 2014. Cambridge, USA
 - [26] **Invited Talk.** "Habitable Planets: An Interior Perspective", Habitable Worlds across Time and Space Conference, Space Telescope Science Institute. Apr 2014. Baltimore, MD, USA
 - [25] **Invited Overview Talk.** “Low-Mass Planets in the Kepler Era”, Kepler Second Science Conference. Nov 2013. San Jose, CA, MA
 - [24] **Invited Review Talk.** “Linked Bulk and Orbital Properties of Low-Mass Planets”, Gordon Conference on Origins of Solar Systems. June 2013. South Hadley, MA, USA
 - [23] **Invited Talk.** Workshop for Science Writers: Astrophysics and Cosmology. May 2013. Stockholm, Sweden. – Declined due to unofficial maternity leave
 - [22] **Invited Talk** Life in the Cosmos Workshop. Smithsonian Institute. Sept 2012. Washington, DC, USA – Declined due to unofficial maternity leave
 - [21] **Invited Talk.** Sagan Exoplanet Summer Workshop: Working with Exoplanet Light Curves. July 2012. California Institute of Technology, Pasadena, CA, USA – Declined due to unofficial maternity leave
 - [20] **Invited Talk.** Kongsberg Conference 25th: Celebrating a Dynamic Planet. May 2012. University of Oslo, Norway
 - [19] **Invited Talk.** Kepler First Science Conference. Dec 2011. NASA Ames, CA, USA
 - [18] **Invited Talk.** CIERA Future of Astronomy Conference. Sep 2011. Northwestern University, Chicago, IL, USA
 - [17] **Contributed Talk.** Extreme Solar Systems Conference II, Sept 2011. Moran, Wyoming, USA
 - [16] **Invited Review Talk.** Gordon Conference on Origins of Solar Systems. July 2011. South Hadley, MA, USA
 - [15] **Invited Talk.** Extrasolar Planets: Towards Comparative Planetology, June 2011. Physikzentrum Bad Honnef, Germany
 - [14] **Invited Talk.** Exoplanet Exploration Program, Exploring Strange New Worlds: From Giant Planets to super-Earths. May 2011, Flagstaff, AZ, USA
 - [13] **Invited Talk.** American Geophysical Union Annual Conference, Session Interiors of Terrestrial Planets and Super-Earth Exoplanets, Dec 2010. San Francisco, CA, USA
 - [12] **Invited Talk.** International Astronomical Union Symposium 276, Oct 2010. Torino, Italy
 - [11] **Contributed Talk.** Detection and Dynamics of Transiting Exoplanets, Aug 2010. Observatoire Haute Provence, France
 - [10] **Invited Talk.** Evolving Theory for Planet Formation Conference, June 2010. Ishigaki, Japan
 - [9] **Invited Talk.** European Science Foundation Conference, Apr 2010. Obergurgl, Austria
 - [8] **Invited Talk.** High Energy Density Laboratory Astrophysics Conference, Mar 2010. Pasadena, CA, USA
 - [7] **Invited Talk.** The Theory and Observations of Exoplanets Conference, Kavli Institute of Theoretical Physics, Mar 2010. Santa Barbara, CA, USA
 - [6] **Invited Keynote Talk.** Goldschmidt Conference, June 2009. Keynote talk. Davos, Switzerland
 - [5] **Invited Talk.** Extra-solar Super-Earths International Workshop, June 2008. Nantes, France
 - [4] **Contributed Poster.** Astrobiology Science Conference, Apr 2008. Santa Clara, CA, USA
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- [3] **Invited Talk.** High Energy Density Laboratory Astrophysics Conference, Apr 2008. St. Louis, MO
- [2] **Contributed Talk.** Extreme Solar Systems Conference I, June 2007. Santorini, Greece
- [1] **Invited Talk.** AAS special session, Jan 2006, T97.04. Washington, DC

TRAINEES CONFERENCE CONTRIBUTIONS (5)

- [11] **Bo Peng.** Contributed talk, “Modelling Carbon Outgassing from Anhydrous Planetesimals.” 52nd Lunar Planetary Science Conference, Mar. 15-19 2020, Virtual.
- [10] **Mykhaylo Plotnykov,** Invited Talk. “Chemical Fingerprints of Formation in Rocky Super-Earths, Earth and Planetary Lab Seminar, Carnegie Institution. Nov 2020, Virtual
- [9] **Mykhaylo Plotnykov,** Contributed Panel Talk. Panel Discussion ‘Super-Earths’. Habitable Worlds 2021 Conference. Feb 22-25 2021, Virtual
- [8] **Jennifer Scora,** Contributed Talk. “Forming compositionally diverse super-Earths with collisions”, Conference Exoplanets III, Heidelberg, July 27-31 2020. Germany. Virtual
- [7] **Jennifer Scora,** Contributed Talk. “Forming compositionally diverse super-Earths with collisions”, Conference CASCA AGM, York University, May 25-28, 2020. Canada 2020. Virtual
- [6] **Fergus Horrobin,** Contributed Talk. “Modelling Tidal Dissipation in Super-Earths with a Partially Molten Mantle”, Conference Rocky Worlds: from the Solar System to Exoplanets, Kavli Institute, University of Cambridge, UK, Jan 2020
- [5] **Mitchell Barrett,** Contributed Poster. “Models for 55 Cnc-e”, Undergraduate Research Fair, Physics Department, University of Toronto, Sept 2019
- [4] **Jennifer Scora,** Contributed Talk. “Forming Rocky Super-Earths with Realistic Collisions” oral presentation, Extreme Solar Systems IV, Reykjavik, Iceland, Aug 2019
- [3] **Emaad Paracha,** Contributed Talk. “Using Machine Learning Algorithms to Model Planetary Collisions and Predict the Masses of the Largest Remnants”, Undergraduate Research Fair, Physics Department, University of Toronto, Sept 2018
- [2] **Jennifer Scora,** Contributed Poster. “Forming iron poor super-earths with collisional N-body simulations”, Emerging Researchers in Exoplanet Sciences, State College, PA, Jun 2018
- [1] **Nathan Winsor,** Contributed Poster. Gordon Research Conference: Origins of Solar Systems, South Hadley, MA, June 2017

11. INVITED LECTURES

ACADEMIC RESEARCH PRESENTATIONS:

INVITED DEPARTMENTAL COLLOQUIUM AND SEMINARS TALKS (27)

- [27] **Astrophysics Seminar,** “Super-Earths’ Chemistry and Formation?”, Department of Physics and Astronomy, University College of London, London, UK— Virtual (Postponed)
- [26] **Colloquium Talk,** “What does the composition of a planet tell us about its formation history?”, Centre for Theoretical Astrophysics and Cosmology, Zurich University, Apr 2021, Zurich, Switzerland — Virtual
- [25] **Colloquium Talk,** “What does the composition of a planet tell us about its formation history?”, Earth and Planetary Lab, Carnegie Institution, Jan 2021, Washington, D.C, USA — Virtual
- [24] **Planetary Journal Seminar Talk.** “Chemical Fingerprints of Formation in Rocky Super-Earths’ Data”, Harvard University, Aug 18 2020, Cambridge, USA — Virtual

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- [23] **Physics Colloquium**, “Super-Earths Composition and the Connection to their Formation”, University of Montreal, Feb 27 2020, Montreal (postponed due to pandemic)
 - [22] **Physics Colloquium**, “Rocky Exoplanets: Formation and Habitability”, University of Alberta, Oct 19 2018 Edmonton
 - [21] **Mercator Fellow Invited Lecture**, “Mini-Neptunes Internal Structure”, Rostock University, August 6 2018, Rostock, Germany
 - [20] **Mercator Fellow Invited Lecture**, “Super-earths Composition as a Signature of Planet Formation”, invited lecture, BGI (Bavarian Research Institute of Experimental Geochemistry and Geophysics), Aug 3 2018, University of Bayreuth, Bayreuth, Germany
 - [19] **Mercator Fellow Invited Lecture**, “Long Term Climate Stability in Exo-Earths”, invited lecture, DLR (German Aerospace Centre), Aug 1 2018, Berlin, Germany
 - [18] **Planetary Journal Seminar Talk**, “Habitability from Tidally Induced Tectonics”, Harvard University, March 23 2018, Cambridge, USA
 - [17] **Colloquium Talk**. University of Toronto, Astronomy Department. June 2012. Toronto, Canada
 - [16] **Colloquium Talk**. Columbia University, Astronomy Department, Colloquium, May 2012. NY, NY, USA
 - [15] **Colloquium Talk**. Bern University, Physics Institute. May 2012. Bern, Switzerland
 - [14] **Seminar Talk**. Northwestern University, Earth’s and Planetary Sciences Seminar. Jan 2012. Chicago, IL, USA
 - [13] **Inaugural Seminar Talk**. McGill University, Astrophysics/Astrobiology Seminar. Jan 2012. Montreal, Canada
 - [12] **Special Talk**. University College of London. Dec 2011. London, UK
 - [11] **Colloquium Talk**. Cornell University, Astronomy Department, Colloquium, Mar 2011. Ithaca, NY, USA
 - [10] **Colloquium Talk**. Penn State University, Astronomy Department, Colloquium, Mar 2011. State College, PA, USA
 - [9] **Colloquium Talk**. University of Chicago, Astronomy & Geology and Geophysics Departments, Colloquium, Feb 2011. Chicago, IL, USA
 - [8] **Seminar Talk**. University of Toronto, Geophysics Seminar, Nov 2010. Toronto, Canada
 - [7] **Colloquium Talk**. Institute of Planetary Research, DLR Berlin, Planetary Colloquium, Dec 2009. Berlin, Germany
 - [6] **Colloquium Talk**. Yale University, Department of Geology and Geophysics, Nov 2008. New Haven, CT, USA
 - [5] **Colloquium Talk**. University of California at Los Angeles, Earth and Space Sciences Department, Colloquium, Apr 2 2008. Los Angeles, CA, USA
 - [4] **Seminar Talk**. Northwestern University, Astrophysics Seminar, Feb 2008. Chicago, IL, USA
 - [3] **Seminar Talk**. Chicago University, Geophysical Laboratory Seminar, Feb 2008. Chicago, IL, USA
 - [2] **Colloquium Talk**. Carnegie Institution of Washington, Department of Terrestrial Magnetism, Colloquium, Oct 2006, Washington, DC, USA
 - [1] **Seminar Talk**. University of California at Berkeley, “Super-Earths” graduate seminar, Oct 2005, Berkeley, CA, USA

SCHOOLS (3)

- [3] **Invited Talk.** “The Importance of Mass on Assessing Planet Habitability”, Sagan Summer Workshop 2020, California Institute of Technology, July 2020, Pasadena, CA, USA - Declined due to scheduling conflicts
- [2] **Invited Lecture.** “Geophysics in Rocky Super-Earths”, Franco Australian Astrobiology and Exoplanet School, Australian National University, Dec 17/2017, Canberra, Australia
- [1] **Invited Lecture.** “Earth-like exoplanets: predictions and observations” Centre for Planetary Sciences 9th International School, June 2012. Kobe, Japan

12. TEACHING & RESEARCH SUPERVISION

12A. UNDERGRADUATE COURSES TAUGHT

I developed the syllabus and all lectures and assignments for the following lecture courses, for which I have sole responsibility (my **Teaching Dossier** is available on request). Starred* courses were new courses.

1. PHYD37. Introduction to Fluid Mechanics. Fourth-year course (~4 - 18 students/yr)

Years taught: 2013*, 2014, 2016, 2017, 2019

Theoretical course that teaches foundational concepts of fluid dynamics: dimensional analysis, tensor notation, mass/heat transfer, derivation of fluid dynamic governing equations, solution to exact problems, high Reynolds number flows, low Reynolds number flows, and instabilities. Term work includes assignments, research reading paper, research reading presentation, midterm and final exam. This course was never taught before 2013.

Average student evaluation, Fall 2017

4.8/5 “The instructor created an environment that was conducive to my learning” [Department mean 3.9/5]

4.2/5 “The course provided me with a deeper understanding of the subject matter” [Department mean 3.9/5]

2. ASTA02. Introduction to Astronomy and Astrophysics: Beyond the Sun and Planets.

First-year course (~80-120 students/yr)

Years taught: *2014, 2017, 2018, 2019, 2020

First year astronomy course taught to science and non-science students. Topics include stellar properties, stellar evolution, death of stars, galaxy properties, large scale universe and a brief introduction to cosmology. I emphasize the ‘why’ and ‘how’ behind the subject matter, as well as the lines of evidence used to deduce current knowledge of the cosmos. The challenge is to teach science concepts with only arithmetic to students without a math or physics background while engaging and challenging the science students.

Average student evaluation, Winter 2019

3.8/5 “The instructor created an environment that was conducive to my learning” [Department mean 3.8/5]

3.9/5 “The course provided me with a deeper understanding of the subject matter” [Department mean 3.9/5]

3. EESC24. Introduction to Practical Machine Learning for Industry and Science. Experiential learning Pilot course (9 students).

Years taught: *2018, 2020

This pilot course was taught to bring experiential learning to the classroom around the topic of machine learning (ML). Topics started from the basic knowledge of python and pandas package, to supervised algorithms, cross validation, classification and regression techniques, and neural networks. Students used real research data throughout the term to learn ML concepts and delivered a final project with their best predictive solution. The best student was rewarded with a summer research position.

Average student evaluation, Winter 2018:

4.4/5 “The instructor created an environment that was conducive to my learning”

4.8/5 “The course provided me with a deeper understanding of the subject matter”

4. **ASTB32. Astrophysics of Stars, Galaxies and the Universe**

Second Year Course: ~30 students

Theoretical course that teaches foundational concepts on stars’ properties, structure, evolution from birth to death, as well as a primer on radiation, and spectra. It teaches students to think of stars as the building knowledge blocks to understand galaxies and furthermore the Universe. I teach this course in a flipped-classroom style with pre-recorded videos of the material, and assigned problems that we discuss during our weekly meetings. My focus is on the physical concepts described in quantitative formalism.

Years taught: *2020

Average student evaluation, Winter 2020:

4.4/5 “The instructor created an environment that was conducive to my learning” [Department mean 3.9/5]

4.2/5 “The course provided me with a deeper understanding of the subject matter” [Department mean 4/5]

5. **PHYD01/PHYD72. Supervised Research/Reading in Physics. (~4 students/term)**

Years taught: Fall 2018, Winter 2019

Course that exposes upper year physics students to research. As a course coordinator my role was to organize all aspects of the marking and deliverables, as well as enhance the research experience for students. I implemented mock filmed presentations with feedback, discussion session, and a monthly system of accountability.

12.B. GRADUATE COURSES TAUGHT

***AST3020. Advanced Topics in Planet and Exoplanet Sciences. Graduate Course (~5 students/yr).**

Years taught: 2014, 2017, 2021

The first time I taught this course was in a seminar style with students presenting every week. For the second time, I flipped the course and had students work out solutions that they presented every week in the classroom to their peers. Topics covered exoplanet and solar system observations, planetary interiors, planetary formation, and atmospheres.

Average student evaluation, Winter 2018:

5/5 “The instructor created an environment that was conducive to my learning” [Dept mean 4.9/5]

4.6/5 “The course provided me with a deeper understanding of the subject matter” [Dept mean 4.6/5]

12.C. RESEARCH SUPERVISION

MSC STUDENTS

The first year of students in the Astronomy Department is equivalent to a one-year masters with students undertaking two projects for their first year. Thus, all master students from Astronomy have two supervisors. Students in the physics department obtain a Master’s degree with only one supervisor.

[8] **Plotnykov, Mykhaylo** (Bsc UTSC). *Super-Earths and Stellar Compositions Connections*

- May 2019 – Aug 2020
- Physics Department

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- [7] **Horrobin, Fergus** (BSc UTSC). *Tidal Dissipation in Multilayer Rocky Planets*.
- May 2019 – May 2020
 - Astronomy Department
- [6] **Peng, Bo** (BSc. Rochester University). *Heating, Melting and Cooling of Planetesimals*
- May 2019 – Sept 2019
 - **Current position:** PhD graduate student in the Astronomy Department at University of Toronto
- [5] **Emily, Deibert** (BSc. UToronto). *Tidal Heating in Mantle Convection of Super-Earths*
- May 2018 – Sept 2018
 - **Current position:** PhD graduate student in the Astronomy Department at University of Toronto
- [4] **Scora, Jennifer** (BSc. McMaster University). *Forming Super-Mercuries and Super-Moons During Giant Impact Collisions*
- Sept 2017 – May 2018
 - **Current position:** PhD graduate student in the Astronomy Department at University of Toronto
- [3] **Winsor, Nathan** (BSc. Memorial University). *Water Retention During Early Evolution of Planets Around M-Dwarfs*
- Sept 2017 – May 2018
 - **Current position:** PhD graduate student in the Astronomy Department at University of Toronto
- [2] **Cloutier, Ryan** (BSc. UToronto). *Could Jupiter or Saturn Have Ejected a Fifth Planet?*
- Sept 2014 – May 2015
 - **Current position:** Postdoctoral Fellow at Harvard University
- [1] **McLeod, Kieran** (BSc. St Mary's). *Composition of Mini-Neptunes*
- Sept 2014 – May 2015
 - **Current position:** Senior Associate at Pricewaterhouse Cooper

PHD STUDENTS

- [4] **Plotnykov, Mykhaylo** (BSc. UTSC). *Planetary Interiors as a Consequence of Formation*
- Sept 2020 – present
- [3] **Peng** (BSc. Rochester University). *Volatile Accretion and Loss of Planetesimals and Planets*
- Sept 2019 – present
- [2] **Scora, Jen** (BSc. McMaster University). *Chemical and Dynamical Evolution of Low-Mass Exoplanets*
- Sept 2018 - present
- [1] **Winsor, Nathan** (BSc. Memorial University). *Habitability of Planets Around M-Dwarfs*
- Sept 2017 to May 2018

POST-DOCTORAL FELLOWS CO-SUPERVISION

I have worked in different capacities with the following independent Centre for Planetary Sciences Postdoctoral Fellows, from supervising work, to career mentoring.

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- [4] **Hammond, Noah** (PhD. Brown University). Topic: Initiation of Plate Tectonics Via Impact Cratering
- Sept 2017 – Aug 2019
 - **Current position:** Visiting Professor at Wheaton College in Massachusetts
- [3] **Jackson, Alan** (PhD. Cambridge University). Topics: Machine Learning for Planetary Collisions Prediction
- Sept 2018 – May 2019
 - **Current position:** Postdoctoral Fellow at Arizona State University
- [2] **Mohamad Ali-Dib** (PhD. Université Franche-Compté) Topics: Moon Crater Counting Via Neural Networks
- Jan 2017 – Aug 2018
 - **Current position:** Postdoctoral Fellow at McGill University
- [1] **Tamayo, Dan** (PhD. Cornell U) Topics: Effect of Close Encounters in the Stability of Jupiter and Saturn's Moons, Machine Learning to Predict the Stability of Planetary Systems
- Oct 2014 – May 2017
 - **Current position:** Hubble Postdoctoral Fellow at Princeton University

RECENT SUPERVISORY & EXAMINING COMMITTEE MEMBERSHIP

Supervisory Committees

- [4] Emily Deibert (PhD, Sivanandam), ongoing
- [3] Ari Silburt (MSc, Menou), graduated
- [2] Bob Tian (PhD, Stanley), graduated
- [1] Lisa Estevez (PhD, Jawardhana), graduated

Examining Committees:

Examining PhD exam member: 2 exams

PhD exam chair: 1

12. D. OTHER TEACHING

UNDERGRADUATE RESEARCH SUPERVISION

Summary. Prof Valencia has supervised 10 independent undergraduate research projects (equivalent to an Honour's thesis), and 9 undergraduates as summer research assistants, work-study program students, and voluntary directed researchers. Research contributions of four undergraduates have warranted authorship on refereed publications (Emaad Paracha, Vivian Tan, Zack Zajac and Michael Pu)

UNDERGRADUATE RESEARCH THESIS

- [10] **Avila, Marco** (UTSC). *Composition of Two Super-Earths*
- Jan 2021 – current
- [9] **Hussain, Sabahat** (Engineering, StG). *Numerical Modelling of Super-Earths' Interiors*
- Sep 2019 – June 2020
- [8] **Plotnykov, Mykhaylo** (UTSC). *Stellar and Planetary Compositions of Super-Earths*
- Jan 2019 – April 2019 (graduated)

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- [7] **Fraser, Tristan** (Physics, StG). *Tidal Equilibrium States for Planet 55 Cnc-e*
 • May 2018 – Jul 2019
- [6] **Luo, Xizi** (Astronomy, StG). *Super-Earth Composition: How well do we need to know mass?*
 • Oct 2017 – Oct 2018
- [5] **Tan, Vivian** (Astronomy, StG). *Vertical Recycling: A New Mechanism for the Climate Stability in Tidally Heated Planets*
 • May 2016 – Apr 2017
 • **Accomplishments:** Work led to a co-authored paper
- [4] **Pu, Michael** (Astronomy, StG). *Ohmic Dissipation in Mini-Neptunes*
 • Oct 2014 – May 2016
 • **Accomplishments:** Work led to a first-authored paper
- [3] **Zack, Zajak** (Physics, StG). *Climate Regulation via Vertical Recycling in Tidally Heated Planets*
 • May 2015 – Dec 2015
 • Centre for Planetary Sciences Summer Research Student
 • **Accomplishments:** Work led to a co-authored paper
- [2] **Bianchi, Daniel** (Astronomy, StG). *Plate Tectonics on Super-Earths*
 • Oct 2014 – May 2015
- [1] **Molina, Ana Maria** (Astronomy, Universidad de Antioquia, Colombia). *Framework to Interpret Super-Earth Composition*
 • May 2007 – June 2008

OTHER UNDERGRADUATE SUPERVISION

Included in this section are summer research students, work-study program students, and voluntary directed research students.

- [9] **Barrett, Mitchell** (Physics, StG). *Internal Structure of 55 Cnc-e Planet*
 • May 2019 – June 2019
- [8] **Douglas, Daniel** (UTSC). *Can Plate Tectonics be Initiated by Impact Collisions?*
 • Dec 2018 – Aug 2019
- [7] **Watanabe, Akino** (Engineering, StG). *Super-Earths Conductivity*
 • Dec 2017 – Aug 2019
- [6] **Martin, Cameron** (Physics, StG). *Compositions of Stars With and Without Planets*
 • Dec 2018 – Feb 2019
- [5] **Paracha, Emaad** (UTSC). *Can a Machine Learn the Outcome of Planetary Collisions?*
 • May 2018 – Oct 2018
 • **Accomplishments:** Work led to a co-authored paper
- [4] **Hussain, Sabahat** (Engineering, StG). *Tidal Torque on Hot Rocky Super-Earths*
 • Dec 2017 – May 2018
- [3] **Yang, Beihang** (UTSC). *Equations of State at Planetary Conditions*
 • May 2017 – Jun 2017, May 2018 – July 2018
- [2] **Fallahtoosi, Farahnaz** (UTSC). *Interior Structure of Super-Earths*
 • Jan 2014 – May 2014

- [1] **Opsenica, Bruno** (UTSC). *Water EOS and Planets Interior Structure*
- Sep 2013 – Dec 2013

E. ADMINISTRATIVE SERVICE

13. A. WITHIN THE UNIVERSITY OF TORONTO

UNDERGRADUATE ADMINISTRATION:

- **Program Supervisor:** Physical Science Major Undergraduate programs. Sep 2014 – present. Department of Physical and Environmental Sciences, UTSC
- **Program Supervisor:** Mathematical and Physical Science Specialist Program Supervisor. Jan 2019 – July 2019, Department of Physical and Environmental Sciences, UTSC
- **Pastoral Tutor Program Coordinator.** Sep 2014 – Aug 2017, Department of Physical and Environmental Sciences, UTSC

GRADUATE ADMINISTRATION:

- **Graduate Admissions Committee Member**, Department of Astronomy. 2017, 2018.

TRI-CAMPUS ADMINISTRATION:

- **Cofounder and Steering Committee Member**, Centre for Planetary Sciences, Sep 2013 – May 2017
 - I cofounded the CPS tri-campus centre by crafting the vision of the Centre, writing the proposal as an EDU-C initiative, and helping to fundraise ~1.4 M within the University. Once operational, I helped advertise the postdoctoral fellowships and served in the recruiting committee while the program was active (3 years). Also, I organized 14 'Planet Day' events (all events but one) including extending invitations, organizing the logistic of the day (advertisement, catering, transportation, lodging for speaker, etc), and hosting the event.

COMMITTEE MEMBERSHIPS:

- **Tenure Committee Member:** Suresh Sivanandam in Astronomy Department, St.G. Jan 2021 - Feb 2021
- **Search Committee Member:** CLTA Astronomy Professor Search for Chemistry and Physics Department, UTM. Sep 2020 - Feb 2021
- **Search Committee Member:** Teaching Stream Professor Search for Physics and Astrophysics, UTSC. Dec 2017 - April 2018
- **Search Committee Member:** Vice-principal and Dean, UTSC. Dec 2015 - Apr 2016
- **PTR Committee**, Department of Physical and Environmental Sciences, UTSC, 2016, 2017
- **Outreach Committee**, Department of Physical and Environmental Sciences, UTSC, 2018, 2019

OTHER:

- **Keynote speaker**, 'Getting Started' (undergraduate orientation event), UTSC, 2015
- **Speaker**, 'U of T Sons and Daughters Day', UTSC, 2014

13. B. OUTSIDE THE UNIVERSITY OF TORONTO

REVIEWER FOR FUNDING AGENCIES AND TIME ALLOCATION COMMITTEES

- **James Webb Space Telescope.** Time Allocation Committee Panelist. Cycle 1. June 2021

- **Canadian Time Allocation Committee, Canada-France-Hawaii Telescope.** Reviewer. Winter 2021
- **Hubble Space Telescope.** Time Allocation Committee Chair. June 2019
- **Hubble Space Telescope.** Time Allocation Committee Panelist. June 2013

SCIENCE OUTREACH PROGRAMS:

- **Astro4Kids.** Founder. Weekly astronomy chats for Spanish-speaking kids world wide as a response to the covid-19 pandemic and with the aim to help families. April 2, 2020 — June 24, 2020

SCIENCE OUTREACH CONTRIBUTIONS:

- **Speaker:** Que variedad podemos esperar debido a las colisiones de alto impacto?, Origenes, Antioquia University, Colombia, Apr 14, 2021
- **Invited Panelist:** Campus Party, Habitability and Space Exploration, July 11, 2020
- **Invited Guest:** guest appearance at Vaughan Montessori pre-school, May 7, 2020
- **Invited Guest:** 2 guest appearances at Bialik Primary School, April-May, 2020
- **Presenter:** Ad-Astra Motion Picture Film, Sept 18, 2019
- **Keynote Speaker:** “Wonderers”, Ontario Science Centre, May 11 2019
- **Speaker:** “Wonderers”, visit to High School Central Toronto Academy, May 14 2019
- **Speaker:** “From Earth to Super-Earths”, Literacy Week, Runnymede Library, Sep 2017, Toronto
- **Speaker:** “Other Habitable Worlds”, Starfest, North York Astronomical Society, July 2017, Ontario, Canada
- **Keynote Speaker:** “From Earth to Super-Earths and Beyond“. Canadian Exploration Geophysics Society, Mar 7 2017. Toronto
- **Speaker:** TEDxPuraVida, Feb 2011. San Jose de Costa Rica

F. OTHER RELEVANT INFORMATION

RESEARCH DELAYS

1. Maternity leave: March 2015 through February 2016. I moved to the University of Toronto in 2013 with a newborn but was not able to take official maternity leave that year. This impacted my research productivity in 2013.
2. A serious health issue occurring on May 2015, and more severely on October 2017 has affected my ability to work especially in the last two years. This injury has required extensive physical therapy (5+ hours on average a week) and that modify my teaching practices.

OTHER EVIDENCE OF IMPACT

MEDIA AND PUBLIC RELATIONS PAPERS & INTERVIEWS

- **Interview:** Segment in FM radio, Colombia about my science for kids initiative Astro4kids. Apr 2020
- **Interview:** “ El Oro de la Astrofísica” (“The Gold of Astrophysics”) Interview-article for national Colombian newspaper El Espectador for the International Day of Girls and Women in Science. Feb 11, 2019
- **Live-Show Sole Interview:** Hora Pico TV from Canal Capital, Bogota, Colombia (city broadcasting channel). Feb 19, 2019
- **Live-Show Interview:** CBC Ontario Today Show. Topic: Search for life. April 21st, 2015
- **Documentary Profile:** The Cosmic Front episode, produced by NHK-World Japan. Dec 2013

- **Live-Show Interview:** CNN Español Show. Topic: Kepler-62e,f, two planets in the habitable zone. Apr 24, 2013.
- **Live-Show Interview:** CNN Español Show. Topic: One exo-Jupiter in formation. Mar 1, 2013.
- **Live-Show Interview:** CNN Español Show. Topic: The world is not ending today. Dec 21, 2012.
- **Live-Show Interview:** CNN Español Show. Topic: Newly found planet, Alpha Centauri Bb. Oct 17, 2012
- **Live-Show Interview:** CNN Español Show. Topic: Super-Earths and the possibility of finding life on them. Sep 5, 2011
- **Scientific American Article:** Sasselov, D. & **D. Valencia**. Planets we could call home. Aug 2011.
- **Documentary Profile:** Discovery Channel Show, Through the Wormhole with Morgan Freeman Episode: How do Aliens look like. Aug 2, 2011.

OTHER:

- Nature Research Highlights. Issue 445. 2007. <https://www.nature.com/articles/445570a>
- Extensive Media Coverage of publications includes: Discover Magazine, Sky Telescope, Universe Today, Geotimes, etc.
- Work included in Foundational Textbook: Planetary Sciences, 2nd Edition (2010), by Inke De Pater and Jack Lissauer, Cambridge University Press, 663 p.
- Work included in Textbook: The Exoplanet Handbook, 2nd Edition, (2018) by Michael Perryman, Cambridge University Press, 952 p.