Curriculum Vitae – Chang-Goo Kim

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Education

Mar 2005 – Feb 2011	**Ph. D in Astronomy** Department of Physics and Astronomy, Seoul National University, Korea
Mar 2001 – Feb 2005	**B. S in Astronomy** Department of Physics and Astronomy, Seoul National University, Korea

Current position

Sep 2016 – present	**Associate Research Scholar** Department of Astrophysical Sciences, Princeton University

Employment

Sep 2017 – Aug 2018	**Flatiron Research Fellow** Center for Computational Astrophysics, Flatiron Institute
Sep 2013 – Aug 2016	**Postdoctoral Research Associate** Department of Astrophysical Sciences, Princeton University
Oct 2011 – Aug 2013	**CITA National Fellow** Department of Physics and Astronomy, University of Western Ontario, Canada

Grants

2022 – 2024	**PI**, NASA Astrophysics Theory Program; \$415,564
2019	**PI**, Chandra cycle 21 (Theory); \$85,000
2018 – 2021	**Co-I**, NASA TCAN (PI: Julian Borrill); \$1,398,099

Research advising

2016 – present	**PhD thesis projects** Woorak Choi (Yonsei, current), Sanghyuk Moon (SNU, PhD in 2022), Lachlan Lancaster (Princeton, PhD in 2022), Alwin Mao (Princeton, PhD in 2020), Munan Gong (Princeton, PhD in 2017)
2018 – present	**Research projects for graduate students** Minghao Guo (Princeton, current), Nora Linzer (Princeton, current), Erin Kado-Fong (Princeton, 2018), Aditi Vijayan (CCA via KSPA, 2018), Kareem El-Badry (CCA via KSPA, 2018)
2014 – present	**Research projects for undergraduate students** Ish Kaul (Princeton, current), Ryan Golant (Princeton, 2019), Mohammad Refat (CCA via AstroCom NYC, 2018), Roberta Raileanu (Princeton, 2014)

Teaching

2021 – 2022	**Bootcamp Lecturer** - Teaching basic Unix commands and remote login (ssh), software version control (git and GitHub), Python programming language and scientific programming stack

2005 – 2010 **Graduate Student Instructor (Teaching Assistant)**
- Grading problem sets and leading problem-solving sessions for courses including *Solar System Astronomy and Lab., Astronomical Observation & Lab. I & II, Astronomy and Lab., Introduction to Astrophysics I & II, Stars and Stellar Systems, Man & the Universe*.
- Designing and leading the Lab class for Introduction to Astronomy
- Teaching scientific computing and numerical analysis – root-finding, numerical integration, linear algebra, linear regression

Computing time allocations

2022 – 2024 **15M CPU hrs (540k SBUs)**, NASA HECC, (**PI: Chang-Goo Kim**)
2018 – 2021 **80M CPU hrs**, NERSC, (PI: Julian Borrill)
2016 – 2021 **24M CPU hrs (850k SBUs)**, NASA HECC, (PI: Eve Ostriker)

Observing proposals

2019 **Co-I**, VLA Extra Large proposal (PI: Adam Leroy); Local Group L-Band Survey
2019 **Co-I**, VLA Regular proposal (PI: Woorak Choi), 7.4 hours, rank B

Scientific collaboration teams

2022 – present **Working Group Leader**, Simons Collaboration on Learning the Universe
2017 – 2022 **Working Group Leader**, Simulating Multiscale Astrophysics to Understand Galaxies (SMAUG)
2018 – 2021 **Working Group Leader**, Modeling Polarized Galactic Foregrounds for Cosmic Microwave Background missions (NASA TCAN)
2022 – present **Member**, Line Emission Mapper X-ray Probe
2021 – present **Member**, Local Group L-Band Survey
2020 – present **Member**, Galactic Australian Square Kilometre Array Pathfinder Survey
2019 – 2020 **Member**, Space Infrared Telescope for Cosmology and Astrophysics (SPICA)
2017 – 2019 **Member**, Probe of Inflation and Cosmic Origins (PICO)

Professional service

2020 – 2022 **Reviewer**, NASA FINESST
2017 **Review Panelist**, NSF AAG Program
2016 – 2017 **Organizer**, Star Formation/ISM Rendezvous Seminars at Princeton University
2012 – present **Referee**, ApJ, ApJL, MNRAS, JOSS

References

Prof. Eve C. Ostriker eco@astro.princeton.edu
Department of Astrophysical Sciences, Princeton University

Prof. Rachel S. Somerville rsomerville@flatironinstitute.org
Center for Computational Astrophysics, Flatiron Institute

Prof. Greg L. Bryan gbryan@astro.columbia.edu
Department of Astronomy, Columbia University

Prof. James M. Stone jmstone@ias.edu
School of Natural Sciences, Institute for Advanced Study

Prof. Snezana Stanimirović sstanimi@astro.wisc.edu
Department of Astronomy, University of Wisconsin-Madison

List of Publications (ADS, Google Scholar)

Metrics for Refereed Publications (from ADS as of *2023-06-27*)
count: 47 — citations: 2193 — h-index: 25

Papers Under Review

Refereed Publications as First Author (count: 34 — citations: 1385)

47. **Kim, Chang-Goo**; Kim, Jeong-Gyu; Gong, Munan; Ostriker, Eve C., *Introducing TIGRESS-NCR. I. Coregulation of the Multiphase Interstellar Medium and Star Formation Rates*, ApJ, **946**, 3, 2023 [3 citations]
46. **Kim, Chang-Goo**; Ostriker, Eve C.; Fielding, Drummond B.; Smith, Matthew C. *et al.*, *A Framework for Multiphase Galactic Wind Launching Using TIGRESS*, ApJ, **903**, 2020 [26 citations]
45. **Kim, Chang-Goo**; Ostriker, Eve C.; Somerville, Rachel S.; Bryan, Greg L. *et al.*, *First Results from SMAUG: Characterization of Multiphase Galactic Outflows from a Suite of Local Star-forming Galactic Disk Simulations*, ApJ, **900**, 61, 2020 [66 citations]
44. **Kim, Chang-Goo**; Choi, Steve K.; Flauger, Raphael, *Dust Polarization Maps from TIGRESS: E/B Power Asymmetry and TE Correlation*, ApJ, **880**, 106, 2019 [32 citations]
43. **Kim, Chang-Goo**; Ostriker, Eve C., *Numerical Simulations of Multiphase Winds and Fountains from Star-forming Galactic Disks. I. Solar Neighborhood TIGRESS Model*, ApJ, **853**, 173, 2018 [140 citations]
42. **Kim, Chang-Goo**; Ostriker, Eve C., *Three-phase Interstellar Medium in Galaxies Resolving Evolution with Star Formation and Supernova Feedback (TIGRESS): Algorithms, Fiducial Model, and Convergence*, ApJ, **846**, 133, 2017 [145 citations]
41. **Kim, Chang-Goo**; Ostriker, Eve C.; Raileanu, Roberta, *Superbubbles in the Multiphase ISM and the Loading of Galactic Winds*, ApJ, **834**, 25, 2017 [124 citations]
40. **Kim, Chang-Goo**; Ostriker, Eve C., *Vertical Equilibrium, Energetics, and Star Formation Rates in Magnetized Galactic Disks Regulated by Momentum Feedback from Supernovae*, ApJ, **815**, 67, 2015 [88 citations]
39. **Kim, Chang-Goo**; Ostriker, Eve C., *Momentum Injection by Supernovae in the Interstellar Medium*, ApJ, **802**, 99, 2015 [291 citations]
38. **Kim, Chang-Goo**; Ostriker, Eve C.; Kim, Woong-Tae, *Three-dimensional Hydrodynamic Simulations of Multiphase Galactic Disks with Star Formation Feedback. II. Synthetic H I 21 cm Line Observations*, ApJ, **786**, 64, 2014 [44 citations]
37. **Kim, Chang-Goo**; Basu, Shantanu, *Long-term Evolution of Decaying Magnetohydrodynamic Turbulence in the Multiphase Interstellar Medium*, ApJ, **778**, 88, 2013 [6 citations]
36. **Kim, Chang-Goo**; Ostriker, Eve C.; Kim, Woong-Tae, *Three-dimensional Hydrodynamic Simulations of Multiphase Galactic Disks with Star Formation Feedback. I. Regulation of Star Formation Rates*, ApJ, **776**, 1, 2013 [171 citations]
35. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Regulation of Star Formation Rates in Multiphase Galactic Disks: Numerical Tests of the Thermal/Dynamical Equilibrium Model*, ApJ, **743**, 25, 2011 [129 citations]
34. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Galactic Spiral Shocks with Thermal Instability in Vertically Stratified Galactic Disks*, ApJ, **720**, 1454, 2010 [22 citations]

33. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Galactic Spiral Shocks with Thermal Instability*, ApJ, **681**, 1148, 2008 [54 citations]

32. **Kim, Chang-Goo**; Kim, Woong-Tae; Ostriker, Eve C., *Interstellar Turbulence Driving by Galactic Spiral Shocks*, ApJ, **649**, 2006 [44 citations]

Refereed Publications w/ Significant Contribution (count: 37 — citations: 395)

Name: student advised/co-advised by me

31. Moon, Sanghyuk; Kim, Woong-Tae; **Kim, Chang-Goo**; Ostriker, Eve C., *Effects of Magnetic Fields on Gas Dynamics and Star Formation in Nuclear Rings*, ApJ, **946**, 114, 2023

30. Guo, Minghao; Stone, James M.; **Kim, Chang-Goo**; Quataert, Eliot, *Toward Horizon-scale Accretion onto Supermassive Black Holes in Elliptical Galaxies*, ApJ, **946**, 26, 2023 [6 citations]

29. Kim, Jeong-Gyu; Gong, Munan; **Kim, Chang-Goo**; Ostriker, Eve C., *Photochemistry and Heating/Cooling of the Multiphase Interstellar Medium with UV Radiative Transfer for Magnetohydrodynamic Simulations*, ApJS, **264**, 10, 2023 [6 citations]

28. Kado-Fong, Erin; **Kim, Chang-Goo**; Greene, Jenny E.; Lancaster, Lachlan, *Ultra-diffuse Galaxies as Extreme Star-forming Environments. II. Star Formation and Pressure Balance in H I-rich UDGs*, ApJ, **939**, 101, 2022 [3 citations]

27. Kim, Jeong-Gyu; Gong, Munan; **Kim, Chang-Goo**; Ostriker, Eve C., *Photochemistry and Heating/Cooling of the Multiphase Interstellar Medium with UV Radiative Transfer for Magnetohydrodynamic Simulations*, 2022 (arXiv:2210.08024), ApJS in press

26. Ostriker, Eve C.; **Kim, Chang-Goo**, *Pressure-regulated, Feedback-modulated Star Formation in Disk Galaxies*, ApJ, **936**, 137, 2022 [24 citations]

25. Choi, Woorak; **Kim, Chang-Goo**; Chung, Aeree, *Ram Pressure Stripping of the Multiphase ISM: A Detailed View from TIGRESS Simulations*, ApJ, **936**, 133, 2022 [2 citations]

24. Moon, Sanghyuk; Kim, Woong-Tae; **Kim, Chang-Goo**; Ostriker, Eve C., *Effects of Varying Mass Inflows on Star Formation in Nuclear Rings of Barred Galaxies*, ApJ, **925**, 99, 2022 [10 citations]

23. Lancaster, Lachlan; Ostriker, Eve C.; Kim, Jeong-Gyu; **Kim, Chang-Goo**, *Star Formation Regulation and Self-pollution by Stellar Wind Feedback*, ApJ, **922**, 2021 [19 citations]

22. Clark, S. E.; **Kim, Chang-Goo**; Hill, J. Colin; Hensley, Brandon S., *The Origin of Parity Violation in Polarized Dust Emission and Implications for Cosmic Birefringence*, ApJ, **919**, 53, 2021 [36 citations]

21. Lancaster, Lachlan; Ostriker, Eve C.; Kim, Jeong-Gyu; **Kim, Chang-Goo**, *Efficiently Cooled Stellar Wind Bubbles in Turbulent Clouds. II. Validation of Theory with Hydrodynamic Simulations*, ApJ, **914**, 90, 2021 [40 citations]

20. Lancaster, Lachlan; Ostriker, Eve C.; Kim, Jeong-Gyu; **Kim, Chang-Goo**, *Efficiently Cooled Stellar Wind Bubbles in Turbulent Clouds. I. Fractal Theory and Application to Star-forming Clouds*, ApJ, **914**, 89, 2021 [57 citations]

19. Moon, Sanghyuk; Kim, Woong-Tae; **Kim, Chang-Goo**; Ostriker, Eve C., *Star Formation in Nuclear Rings with the TIGRESS Framework*, ApJ, **914**, 9, 2021 [14 citations]

18. Koo, Bon-Chul; **Kim, Chang-Goo**; Park, Sangwook; Ostriker, Eve C., *Radiative Supernova Remnants and Supernova Feedback*, ApJ, **905**, 35, 2020 [12 citations]

17. Gong, Munan; Ostriker, Eve C.; **Kim, Chang-Goo**; Kim, Jeong-Gyu, *The Environmental Dependence of the XCO Conversion Factor*, ApJ, **903**, 142, 2020 [45 citations]

16. Seon, Kwang-il; **Kim, Chang-Goo**, *Ly-alpha Radiative Transfer: Monte Carlo Simulation of the Wouthuysen-Field Effect*, ApJS, **250**, 9, 2020 [20 citations]

15. Mao, S. Alwin; Ostriker, Eve C.; **Kim, Chang-Goo**, *Cloud Properties and Correlations with Star Formation in Self-consistent Simulations of the Multiphase ISM*, ApJ, **898**, 52, 2020 [20 citations]

14. Kim, Woong-Tae; **Kim, Chang-Goo**; Ostriker, Eve C., *Local Simulations of Spiral Galaxies with the TIGRESS Framework. I. Star Formation and Arm Spurs/Feathers*, ApJ, **898**, 35, 2020 [35 citations]

13. Kado-Fong, Erin; Kim, Jeong-Gyu; Ostriker, Eve C.; **Kim, Chang-Goo**, *Diffuse Ionized Gas in Simulations of Multiphase, Star-forming Galactic Disks*, ApJ, **897**, 143, 2020 [22 citations]

12. Vijayan, Aditi; **Kim, Chang-Goo**; Armillotta, Lucia; Ostriker, Eve C. *et al.*, *Kinematics and Dynamics of Multiphase Outflows in Simulations of the Star-forming Galactic Interstellar Medium*, ApJ, **894**, 12, 2020 [24 citations]

11. El-Badry, Kareem; Ostriker, Eve C.; **Kim, Chang-Goo**; Quataert, Eliot *et al.*, *Evolution of supernovae-driven superbubbles with conduction and cooling*, MNRAS, **490**, 1961, 2019 [47 citations]

10. Gong, Munan; Ostriker, Eve C.; **Kim, Chang-Goo**, *The X CO Conversion Factor from Galactic Multiphase ISM Simulations*, ApJ, **858**, 16, 2018 [51 citations]

Refereed Publications as Co-Author (count: -24 — citations: 413)

9. Motwani, Bhawna; Genel, Shy; Bryan, Greg L.; **Kim, Chang-Goo** *et al.*, *First Results from SMAUG: Insights into Star Formation Conditions from Spatially Resolved ISM Properties in TNG50*, ApJ, **926**, 139, 2022 [8 citations]

8. Pingel, N. M. *et al.* (incl. **CGK**), *GASKAP-HI pilot survey science I: ASKAP zoom observations of HI emission in the Small Magellanic Cloud*, PASA, **39**, 2022 [7 citations]

7. Pandya, V. *et al.* (incl. **CGK**), *Characterizing mass, momentum, energy, and metal outflow rates of multiphase galactic winds in the FIRE-2 cosmological simulations*, MNRAS, **508**, 2979, 2021 [52 citations]

6. Pandya, V. *et al.* (incl. **CGK**), *First Results from SMAUG: The Need for Preventative Stellar Feedback and Improved Baryon Cycling in Semianalytic Models of Galaxy Formation*, ApJ, **905**, 4, 2020 [29 citations]

5. Fielding, D. B. *et al.* (incl. **CGK**), *First Results from SMAUG: Uncovering the Origin of the Multiphase Circumgalactic Medium with a Comparative Analysis of Idealized and Cosmological Simulations*, ApJ, **903**, 32, 2020 [39 citations]

4. Murray, Claire E.; Peek, J. E. G.; **Kim, Chang-Goo**, *Extracting the Cold Neutral Medium from H I Emission with Deep Learning: Implications for Galactic Foregrounds at High Latitude*, ApJ, **899**, 15, 2020 [19 citations]

3. Murray, C. E. *et al.* (incl. **CGK**), *The 21-SPONGE H I Absorption Line Survey. I. The Temperature of Galactic H I*, ApJS, **238**, 14, 2018 [69 citations]

2. Murray, Claire E.; Stanimirović, Snežana; **Kim, Chang-Goo**; Ostriker, Eve C. *et al.*, *Recovering Interstellar Gas Properties with Hi Spectral Lines: A Comparison between Synthetic Spectra and 21-SPONGE*, ApJ, **837**, 55, 2017 [21 citations]

1. Safranek-Shrader, Chalence; Krumholz, Mark R.; **Kim, Chang-Goo**; Ostriker, Eve C. *et al.*, *Chemistry and radiative shielding in star-forming galactic discs*, MNRAS, **465**, 885, 2017 [47 citations]

Conference Proceedings/White Papers

- Kraft, R. *et al.* (incl. **CGK**), *Line Emission Mapper (LEM): Probing the physics of cosmic ecosystems*, 2022 (arXiv:2211.09827)
- **Kim, Chang-Goo**; Ostriker, Eve C., 2016 (arXiv:1511.00018), In P. Jablonka, P. André, and F. van der Tak, editors, *From Interstellar Clouds to Star-Forming Galaxies: Universal Processes?*, volume 315 of *IAU Symposium*, pages 38–41, Feedback Regulated Turbulence, Magnetic Fields, and Star Formation Rates in Galactic Disks.
- **Kim, Chang-Goo**; Ostriker, Eve C.; Kim, Woong-Tae, 2015 (arXiv:1211.5161), Highlights of Astronomy, 16:609–610, March 2015, Numerical modeling of multiphase, turbulent galactic disks with star formation feedback.

List of Professional Presentations

Professional presentations

12/2022	**Invited Talk**, *Multiphase ISM from the TIGRESS-NCR simulations*, Theory meets Observations: Star Formation Physics Probed in Nearby Galaxies, Heidelberg, Germany
11/2022	**Seminar**, *Introducing TIGRESS-NCR: current status of numerical modeling of the star-forming ISM*, Thunch, Princeton, NJ
11/2022	**Colloquium**, *Introducing TIGRESS-NCR: current status of numerical modeling of the star-forming ISM*, University of Wisconsin-Madison, Madison, WI
11/2022	**Colloquium**, *Introducing TIGRESS-NCR: current status of numerical modeling of the star-forming ISM*, Osaka University, Osaka, Japan
8/2022	**Colloquium**, *Numerical modeling of the star-forming ISM: SFRs, Outflows, and ISM energetics*, Korea Astronomy and Space Science Institute, Daejeon, Korea
8/2022	**Contributed Talk**, *How Are Galactic Star Formation Rates Regulated?*, IAU Symposium #373: Resolving the Rise and Fall of Star Formation in Galaxies, Busan, Korea
7/2022	**Invited Talk**, *Introducing TIGRESS-NCR:ISM energetics/phases and SFRs*, Interstellar Institute #5: With Two Eyes, Orsay, France
7/2022	**Contributed Talk**, *How Are Galactic Star Formation Rates Regulated?*, A Holistic View of Stellar Feedback and Galaxy Evolution, Ascona, Switzerland
5/2022	**Invited Talk**, *How Do Stellar Feedback Regulates Galactic Star Formation Rates and Drives Multiphase Outflows?*, CITA, Toronto, Canada
4/2022	**Colloquium**, *Galactic Star Formation Rates and Multiphase Outflow Driving in the Star-Forming ISM*, University of Florida, Gainesville, FL
10/2021	**Invited Talk**, *How Are Galactic Star Formation Rates Regulated?*, CEA-Saclay, Paris, France
8/2021	**Invited Talk**, *Multiphase Galactic Outflows inTIGRESS*, Baltimore Wind Workshop 2021, Baltimore, MD
6/2021	**Invited Talk**, *The Role of Magnetic Fields in Regulating Star Formation Rates*, Midwest Magnetic Field Meeting 2021, Madison, WI (remote)
4/2021	**Invited Talk**, *MHD Simulations of the ISM and Synthetic Dust Polarization Maps*, Pan-Experiment Galactic Science Group Seminar, , remote
8/2020	**Invited Talk**, *A Perspective on the Future of ISM Simulations in the 2030s*, Cosmology with CMB-S4, University of Chicago, remote
3/2020	**Colloquium**, *Self-Regulation of Star Formation Rates and Launching of Multiphase Galactic Winds*, University of Georgia, Athens, GA
2/2020	**Colloquium**, *Self-Regulation of Star Formation Rates and Launching of Multiphase Galactic Winds*, Waterloo, ON, Canada
11/2019	**Invited Review**, *Feedback Regulated Star Formation*, Cosmic turbulence and magnetic fields: physics of baryonic matter across time and scales, Cargése, France

6/2019 **Contributed Talk**, *Multiphase Outflows in TIGRESS*, Feedback and its Role in Galaxy Formation, Spetses, Greece

3/2019 **Invited Talk**, *Fast Fourier Transform and Self Gravity*, UNLV, Las Vegas, NV

3/2019 **Invited Review**, *Galactic Star Formation Rates*, Linking galaxies from the Epoch of initial star-formation to today, Sydney, Australia

3/2019 **Colloquium**, *Introducing TIGRESS: Where Gravity and Feedback Meet the Real ISM*, University of Maryland, College Park, MD

2/2019 **Invited Talk**, *Multiphase ISM interacting with ICM*, CCA, New York, NY

2/2019 **Colloquium**, *Introducing TIGRESS: Where Gravity and Feedback Meet the Real ISM*, Australia National University, Canberra, Australia

10/2018 **Invited Talk**, *Synthetic Observations of TIGRESS: Dust Polarization Maps, HI 21cm Lines, and more*, The Milky Way in the age of Gaia, Orsay, France

9/2018 **Contributed Talk**, *Galactic Winds in TIGRESS*, THINKSHOP15, Potsdam, Germany

8/2018 **Colloquium**, *Star Formation Rates and Galactic Winds in TIGRESS*, Korea Astronomy and Space Science Institute, Daejeon, Korea

8/2018 **Colloquium**, *Star Formation Rates and Galactic Winds in TIGRESS*, Yonsei University, Seoul, Korea

7/2018 **Invited Talk**, *Star Formation Rates and Galactic Winds in TIGRESS*, CCA, New York, NY

6/2018 **Invited Talk**, *Synthetic Polarized Dust Emission from Self-Consistent MHD Simulations*, CMB Foreground Workshop at CCA, New York, NY

4/2018 **Invited Talk**, *Partner of Cosmic Rays: Multiphase ISM and Galactic Outflows*, MPPC Workshop, Princeton, NJ

3/2018 **Invited Talk**, *Star Formation and Galactic Winds in Self-Consistent Local ISM Simulations*, Computational Galaxy Formation at Ringberg Castle, Tegernsee, Germany

11/2017 **Invited Talk**, *Self-Consistent MHD Simulations of the Local ISM:Synthetic Polarized Dust Emission*, CMB Foreground Workshop at UCSD, San Diego, CA

7/2017 **Invited Talk**, *TIGRESS: Three-phase ISM in Galaxies Resolving Evolution with Star formation and Supernova feedback*, The ISM beyond 3D, Orsay, France

5/2017 **Colloquium**, *Supernova as a Powerful Regulator of Galactic SFRs and Winds*, Osaka University, Osaka, Japan

2/2017 **Colloquium**, *Galactic Star Formation Rates Regulated by Star Formation Feedback*, University of California, Santa Barbara, CA

2/2017 **Invited Talk**, *Supernova Driven Galactic Winds and Synthetic Observations using TIGRESS*, UCSB, Santa Barbara, CA

10/2016 **Colloquium**, *Self-Regulation of Star Formation Rates in Galactic Disks*, Shanghai Jiao Tong University, Shanghai, China

10/2016 **Colloquium**, *Supernova Driven Galactic Outflows*, Korea Astronomy and Space Science Institute, Daejeon, Korea

10/2016 **Invited Talk**, *How do Supernovae Regulate Star Formation and Launch Galactic Winds?*, 7th East-Asia Numerical Astrophysics Meeting, Beijing, China

10/2016 **Colloquium**, *Supernova Driven Galactic Outflows*, Seoul National University, Seoul, Korea

8/2016 **Invited Review**, *How Do Supernovae Regulate Star Formation and Launch Galactic Winds?*, How Galaxies Form Stars, Stockholm, Sweden

5/2016 **Invited Talk**, *Star Formation and Galactic Winds Regulated by Supernovae*, Computational Galaxy Formation at Ringberg Castle, Tegernsee, Germany

10/2015 **Contributed Talk**, *Generation and Saturation of Magnetic Fields in the ISM Regulated by Star Formation Feedback*, Magnetic Fields in the Universe V, Cargése, France

8/2015 **Contributed Talk**, *Feedback Regulated Turbulence, Magnetic Fields, and SFRs in Galactic Disks*, IAU Symposium #315, Honolulu, HI

4/2015 **Invited Talk**, *Feedback Regulated Turbulence, Magnetic Fields, and SFRs in Galactic Disks*, IAS, Princeton, NJ

9/2014 **Colloquium**, *Supernova Feedback in Multiphase Galactic Disks*, Seoul National University, Seoul, Korea

9/2014 **Colloquium**, *Supernova Feedback in Multiphase Galactic Disks*, Korea Astronomy and Space Science Institute, Daejeon, Korea

9/2014 **Colloquium**, *Supernova Feedback in Multiphase Galactic Disks*, Korea Institute for Advanced Study, Seoul, Korea

9/2014 **Invited Talk**, *Feedback Regulated SFRs and HI 21cm Lines*, 6th East-Asia Numerical Astrophysics Meeting, Suwon, Korea

6/2014 **Invited Talk**, *Momentum Injection by Supernovae in the ISM*, KITP Program – Gravity's Loyal Opposition, Santa Barbara, CA

4/2013 **Contributed Talk**, *Long-Term Evolution of Decaying MHD Turbulence in the Multiphase ISM*, KAS Spring Meeting, Daecheon, Korea

2/2013 **Invited Talk**, *Long-Term Evolution of Decaying MHD Turbulence in the Multiphase ISM*, CITA National Fellow Meeting, Toronto, Canada

1/2013 **Contributed Talk**, *Long-Term Evolution of Decaying MHD Turbulence in the Multiphase ISM*, AAS Meeting #221, Long Beach, CA

8/2012 **Invited Talk**, *Numerical Modeling of Multiphase, Turbulent Galactic Disks with Star Formation Feedback*, IAU General Assembly – SpS12, Beijing, China

9/2011 **Colloquium**, *Regulation of Star Formation Rates in Galactic Disks*, Yonsei University, Seoul, Korea

3/2011 **Colloquium**, *Thermal and Dynamical Evolution of a Gaseous Medium and Star Formation in Disk Galaxies*, National Institute for Mathematical Sciences, Daejeon, Korea