

Christopher J.W. Carchedi

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RESEARCH APPOINTMENTS

Assistant Professor	2026-Present
Dept. of Earth and Atmospheric Sciences, City College of New York	
Carnegie Postdoctoral Research Fellow	2023-2026
Earth and Planets Laboratory, Carnegie Institution for Science	
Graduate Research Assistant	2017-2023
Dept. of Earth and Environmental Sciences, Columbia University	
Research Assistant	2015-2017
Dept. of Earth, Environmental, and Planetary Sciences, Brown University	

EDUCATION

Columbia University, Graduate School of Arts and Sciences, New York, NY	
Ph.D. , Seismology (Thesis Advisor: James B. Gaherty)	2023
<i>Dissertation: Environmental and tectonic systems in Africa and South Asia constrained by seismic noise, surface waves, and scattering</i>	
M.A., M.Phil. , Seismology	2019, 2021
Brown University, Providence, RI	
Sc.B. with Honors , Geology-Physics/Mathematics <i>magna cum laude</i>	2017
<i>Senior Thesis: Constructing a high-resolution temporal record of spreading-rate variations along the Mid-Atlantic Ridge</i>	

AWARDS

National Science Foundation EAR Postdoctoral Research Fellowship	2023
Teaching Development Program Certification, Columbia University	2022
InSightSeers Program Invitee – InSight Mission, NASA	2021
Graduate School of Arts & Sciences Nat. Sci. Fellowship, Columbia University	2017
Sarah LaMendola Undergraduate Research Award, Brown University	2017
Senior Award, Brown University	2017
Bernie Leadership Award, Summer of Applied Geophysical Experience	2016
Romer Undergraduate Teaching and Research Award, Brown University	2015

FUNDING

National Science Foundation - EAR-PF “Investigating the evolution of flat-slab subduction under northern and central South America using generalized Radon transform migration”, Recipient \$180,000 (2023)
Seismological Society of America and LDEO – Seismology Student Workshop (SSW), Co-organizer, \$17,200 (2019, 2020)

PEER REVIEWED PUBLICATIONS

1. **Carchedi, C.J.W.**, L. Wagner, G. Monsalve, D.S. Avellaneda-Jiménez, and S. Golden (2026). Complex shear-wave splitting behavior in the northern Andes and possible implications for mantle flow around the Caldas Tear. *JGR Solid Earth*, **131(6)**, e2025JB033131. <https://doi.org/10.1029/2025JB033131>.
2. Russell, J.B., and **C.J.W. Carchedi** (2026). Estimating ice cover on the Great Lakes using seismic ambient noise. *Geophys. Res. Lett.*, **53(5)**, e2025GL120498. <https://doi.org/10.1029/2025GL120498>.
3. **Carchedi, C.J.W.**, J.B. Gaherty, J.S. Byrnes, S. Rondenay, M.S. Steckler, R. Ajala, P. Persaud, E.A. Sandvol, M.S. Alim, S. Singha, and S.H. Akhter (2025). Evolving sediment structure and lithospheric architecture across the Indo-Burman forearc margin from the joint inversion of surface- and scattered-wave seismic constraints. *JGR Solid Earth*, **130(6)**, e2024JB030050. <https://doi.org/10.1029/2024JB030050>.
4. **Carchedi, C.J.W.**, J.B. Gaherty, S.C. Webb, and D.J. Shillington (2022). Investigating short-period lake-generated microseisms using a broadband array of onshore and lake-bottom seismometers. *Seismological Research Letters*, **93 (3)**, 1585-1600. <https://doi.org/10.1785/0220210155>.

INVITED SEMINARS AND TALKS

City College of New York, Department Seminar, 2026-02-26
EPL Carnegie Science, Department Seminar, 2026-01-29
LDEO Columbia University, Public Thesis Defense, 2023-06-23

TEACHING EXPERIENCE

Environmental Geophysics	Fall 2026
Earth's Env. Systems: The Solid Earth –Teaching/Lab Instructor	Fall 2019, 2020
Summer of Applied Geophys. Experience – Teaching/Field Instructor	Summer 2017
Physical Processes in Geology – Teaching/Lab Assistant	Fall 2015, 2016
Structural Geology – Teaching/Lab Assistant	Spring 2015, 2016

Workshops

Advancing Inclusive Mentoring (AIM), Carnegie Science	Spring 2024
Supporting Hybrid/Online Learning and Teaching (SHOLT), CTL	Fall 2020
Remote Online Sessions for Emerging Seismologists (ROSES), IRIS	Summer 2020
Essentials of Teaching and Learning, Columbia CTL	Fall 2019

MENTORING

Undergrads

Morgan Rife (BS Geology/Mathematics, Radford University)	2025 –
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PROFESSIONAL SERVICE

Conferences and Workshops

- Session Convener*, American Geophysical Union (AGU) Fall Meeting
- Cordillera Conundrums: Tectonics in Northwestern South America after the Closing of the Central American Seaway – Washington, DC 2024
- Organizing Committee*, Seismology Student Workshop - LDEO 2019-2021

Miscellaneous

Journal Referee, Journal of Geophysical Research; Geophysical Research Letters; Geophysical Journal International; Nature Communications

FIELD EXPERIENCE

- MUSICA Broadband Array, Colombia – Lead Field Tech. Jan 2024-Jun 2025 (12 w)
- BIMA Broadband Array, Bangladesh – Lead Field Tech. Feb 2018-April 2022 (12 w)
- Queen Charlotte Fault Imaging Project – OBS Deployment August 2021 (2 w)
- IRIS-PASSCAL Instrumentation Short Course, Socorro, NM November 2017 (1 w)
- SAGE – Teaching/Field Assistant, Santa Fe, NM June-July 2016, 2017 (8 w)

OUTREACH & LEADERSHIP

- Panelist*, “Mission Matchmaker” – AwesomeCon DC 2026
- Panelist*, “Exploring the Science of Sci-Fi Planets” – AwesomeCon DC 2025
- Organizer*, Geophysics/Geochemistry Reading Group – Carnegie EPL 2024-2025
- Primary Convener*, AGU Session 2024
- Guest Teacher*, K-12 Classrooms 2020, 2024
- Volunteer/ Contributor*, [Seismic Sound Lab](#) – LDEO 2020-2023
- Organizing Committee*, [Seismology Student Workshop](#) 2018-2023
- Volunteer*, [LDEO Open House](#) 2017-2022
- Volunteer*, [Girls’ Science Day at Columbia University](#) 2018
- Advisor*, Meiklejohn Peer Advising Program – Brown University 2015-2017
- Co-organizer*, DEEPS Spring Trip to Iceland – Brown University 2015-2016

SELECTED CONFERENCE PROCEEDINGS

1. **Carchedi, C.J.W.**, L. Wagner, and G. Monsalve (2026). Flow through a slab tear? Complex shear-wave splitting behavior in the northern Andes. *Integrating Seismic Anisotropy, Geodynamics, and Rock Deformation Workshop*, St. Louis, MO. Poster Abstract 5.
2. **Carchedi, C.J.W.**, L. Wagner, and G. Monsalve (2026). Flow through a slab tear? Lateral variations in seismic anisotropy beneath the Colombian Andes. *European Geophysical Union General Assembly 2026*, Poster Abstract X2.88.
3. **Carchedi, C.J.W.**, L. Wagner, D.S. Avellaneda-Jimenez, G. Monsalve, and S. Golden (2025). Complex mantle flow around and through the Caldas Tear. *Gordon Research Conference (GRC) Interior of the Earth Meeting 2025*, Poster Abstract: 40.
4. **Carchedi, C.J.W.**, L. Wagner, D.S. Avellaneda-Jimenez, G. Monsalve, and S. Golden (2024). Teleseismic shear-wave splitting from the MUSICA project across the northwestern Andes. *American Geophysical Union (AGU) Fall Meeting 2024*, Poster Abstract: T11C-3331.

5. Russell, J.B. and **C.J.W. Carchedi** (2024). Great Lakes microseism: toward estimating lake ice cover from seismic noise observations. *American Geophysical Union (AGU) Fall Meeting 2024*, Talk Abstract: S22C-0006.
6. **Carchedi, C.J.W.**, J.B. Gaherty, J. Byrnes, S. Rondenay, M.S. Steckler, R. Ajala, P. Persaud, E.A. Sandvol, M.S. Alim, and S.H. Akhter (2023). From evolving accreting sediments to a modified mantle: shear-velocity structure across the Indo-Burman forearc margin from the joint inversion of surface- and scattered-wave constraints. *American Geophysical Union (AGU) Fall Meeting 2023*, Poster Abstract: T41C-0243.
7. **Carchedi, C.J.W.**, J.B. Gaherty, S. Rondenay, J. Byrnes, R. Ajala, P. Persaud, M.S. Alim, S.H. Akhter, E.A. Sandvol, M.S. Steckler (2022). Extreme sediment accretion: shear-velocity structure across the Indo-Burman forearc margin from the joint inversion of surface-wave and scattering constraints. *American Geophysical Union (AGU) Fall Meeting 2022*, Talk Abstract: T52B-07.
8. **Carchedi, C.J.W.**, J.B. Gaherty, S. Rondenay, R. Ajala, P. Persaud, E.A. Sandvol, M.S. Steckler (2022). Generalized radon transform migration across the Indo-Burman accretionary margin. *GeoPRISMS Structure and Deformation at Plate Boundaries Workshop, March 2022*.
9. **Carchedi, C.J.W.**, J.B. Gaherty, S. Rondenay, R. Ajala, P. Persaud, J. Byrnes, E.A. Sandvol, M.S. Steckler, A.E. Foster (2021). Towards 3D shear-velocity structure across the Indo-Burman accretionary margin by the joint inversion of surface-waves and scattering constraints: generalized Radon transform migration. *American Geophysical Union (AGU) Fall Meeting 2021*, E-Lightning Presentation Abstract: T41D-01.
10. J. Birnbaum, **C.J.W. Carchedi**, M. Lee, T. Sawi, and J.B. Russell (2021). Browser-based visualization of seismic records to build seismogram literacy. *American Geophysical Union (AGU) Fall Meeting 2021*, Poster Abstract ED15A-0521.
11. **Carchedi, C.J.W.**, J.B. Gaherty, R. Ajala, P. Persaud, E.A. Sandvol, M.S. Steckler, A. E. Foster (2020). 3D shear-velocity structure across the Indo-Burman subduction system from surface-wave constraints. *American Geophysical Union (AGU) Fall Meeting 2020*, Poster Abstract: T048-0001.
12. Grall, C., P.M. Betka, B. Oryan, M.S. Steckler, **C.J.W. Carchedi**, V. Ballu, R. Buck, S.H. Akhter, and J.B. Gaherty (2021). The enigmatic Indo-Burma convergent margin at the Ganges-Meghna-Brahmaputra delta. *American Geophysical Union (AGU) Fall Meeting 2021*, Poster Abstract: T047-0008.
13. **Carchedi, C.J.W.**, J.B. Gaherty, E.A. Sandvol, P. Persaud, M.S. Steckler (2019). Shear velocity structure across the Indo-Burman accretionary margin from ambient-noise and teleseismic Rayleigh waves. *American Geophysical Union (AGU) Fall Meeting 2019*, Poster Abstract: T21F-0387.
14. **Carchedi, C.J.W.**, J.B. Gaherty, D.J. Shillington, N.J. Accardo, C.A. Scholz, P.R.N. Chindandali, R. Ferdinand, A. Nyblade (2019). Investigating short-period microseisms near Lake Malawi using a broadband array of onshore and lake-bottom seismometers. *GeoPRISMS Synthesis & Integration Theoretical and Experimental Institute*, Poster Abstract: A-43.
15. Ajala, R., P. Persaud, M.S. Steckler, E.A. Sandvol, S.H. Akhter, J.B. Gaherty, **C.J.W. Carchedi**, C. Grall, L. Seeber (2018). Teleseismic receiver functions constraint on the structure of the Indo-Burma subduction system. *American Geophysical Union (AGU) Fall Meeting 2018*, Poster Abstract: T11H-0238.
16. **Carchedi, C.J.W.**, J.B. Gaherty, D.J. Shillington, N.J. Accardo, C.A. Scholz, P.R.N. Chindandali, R. Ferdinand, A. Nyblade (2018). Investigating short-period microseisms near Lake Malawi using a broadband array of onshore and lake-bottom seismometers. *American Geophysical Union (AGU) Fall Meeting 2018*, Poster Abstract: S51D-0356.

17. T. Herbert, C.A. Dalton, and **C.J.W. Carchedi** (2017). How we got to the northern hemisphere ice ages: late Miocene global cooling and plate tectonic CO₂ forcing. *American Geophysical Union (AGU) Fall Meeting 2017*, Poster Abstract: PP21A-1251.
18. Barker, J.E., S. Daneshvar, A. Langhans, C. Okorie, A. Parapuzha, N. Perez, A. Turner, E. Smith, **C.J.W. Carchedi**, A. Creighton, M. Folsom, P. Bedrosian, L. Pellerin, D.W. Feucht, S. Kelly, J.F. Ferguson, and D. McPhee (2017). Multi-scale, multi-method geophysical investigations of the Valles Caldera. *American Geophysical Union (AGU) Fall Meeting 2017*, Poster Abstract: GP33A-0956.
19. Sica, C., D. Graham, E. Peacock, C. Suen, A. Creighton, **C.J.W. Carchedi**, D.W. Feucht, J.A. Civitello, J. Jarret, C. Martin, J.F. Ferguson, D. McPhee, L. Pellerin (2017). Geophysical exploration of Tyuonyi Pueblo in Bandelier National Monument, New Mexico, USA. *American Geophysical Union (AGU) Fall Meeting 2017*, Poster Abstract: NS33B-2186.
20. Braile, L.W., **C.J.W. Carchedi**, H.E. Kreuger, M. Muscat, F. Apango, L.J. Phillips, M. Rhoads, D. Stayt, T. Steele, Z. Steele, J.F. Ferguson, D. McPhee, S. Biehler, M.D. Ralston, W.S. Baldrige (2016). Gravity and seismic investigations of the northern Rio Grande Rift and Valles Caldera area, New Mexico. *American Geophysical Union (AGU) Fall Meeting 2016*, Poster Abstract: T41E-2973.
21. **Carchedi, C.J.W.**, C.A. Dalton, T. Herbert (2016). Constructing a high-resolution temporal record of spreading-rate variations along the Mid-Atlantic Ridge. *American Geophysical Union (AGU) Fall Meeting 2016*, Poster Abstract: T33A-3007.

SKILLS

Programming: Python, MATLAB, GMT, shell scripting

Software: git, SAC, Adobe Illustrator, Microsoft Office

Areas of focus: seismology, surface waves, ambient seismic noise, scattered waves, seismic anisotropy, seismic tomography, time-series analysis, field experiment management, data visualization, Earth science education

PROFESSIONAL SOCIETIES

Seismological Society of America	2018-Present
Sigma Xi Scientific Research Honor Society	2017-Present
American Geophysical Union	2016-Present