Christopher J.W. Carchedi

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RESEARCH APPOINTMENTS

Carnegie Postdoctoral Research Fellow 2023–Present
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 2023
Dissertation: Environmental and tectonic systems in Africa and South Asia constrained by seismic noise, surface waves, and scattering

M.Phil., Seismology 2021

M.A., Seismology 2019

Brown University, Providence, RI 2013-2017

Sc.B. with Honors, Geology–Physics/Mathematics *magna cum laude*
Senior Thesis: Constructing a high-resolution temporal record of spreading-rate variations along the Mid-Atlantic Ridge

AWARDS

Teaching Development Program Certification, Columbia University 2022
InSightSeers Program – Invited Shadow Experience, 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

PUBLICATIONS

1. **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.

MANUSCRIPTS

1. **Carchedi, C.J.W.**, J.B. Gaherty, S. Rondenay, R. Ajala, P. Persaud, and J. Byrnes, (*in prep.*). 3D shear-velocity structure across the Indo-Burman accretionary margin by the joint inversion of surface-wave and scattering constraints [*Tentative title.*]

CONFERENCE PROCEEDINGS

1. **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.
2. **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.*
3. **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.
4. **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.
5. **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.
6. **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.
7. 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.
8. **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.
9. 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.
10. 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.F. Ferguson, D. McPhee, S. Biehler, M.D. Ralston, W.S. Baldridge (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.
11. **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.

TEACHING EXPERIENCE

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

Workshops

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

FUNDING

- Seismological Society of America & LDEO – Seismology Student Workshop (SSW)
  Co-organizer, *$17,200* (2019)

SERVICE & OUTREACH

Journal Referee, Journal of Geophysical Research; Geophysical Research Letters

Guest Teacher, K-12 Classrooms	2020–Present
Volunteer/Contributor, Seismic Sound Lab – LDEO	2020–Present
Organizing Committee, Seismology Student Workshop	2018–Present
Volunteer, Girls' Science Day at Columbia University	2018
Volunteer, LDEO Open House	2017–Present
Advisor, Meiklejohn Peer Advising Program – Brown University	2015–2017
Co-organizer, DEEPS Spring Trip to Iceland – Brown University	2015–2016

FIELD EXPERIENCE

BIMA Broadband Demobilization, Bangladesh	April 2022 (1 w)
Queen Charlotte Fault Imaging Project – OBS Deployment	August 2021 (2 w)
BIMA Service Run #2 – Lead Field Technician, Bangladesh	October 2019 (2 w)
BIMA Service Run #1 – Field Technician, Bangladesh	October 2018 (1 w)
BIMA Broadband Deployment, Bangladesh	February 2018 (4 w)
IRIS-PASSCAL Instrumentation Short Course, Socorro, NM	November 2017 (1 w)
SAGE – Participant, Teaching/Field Assistant, Santa Fe, NM	June–July 2016, 2017 (8 w)

SKILLS

Programming: Python, MATLAB, GMT, shell scripting
Software: git, SAC, Adobe Illustrator, Microsoft Office
Areas of focus: seismology, surface waves, ambient seismic noise, seismic tomography, time-series analysis, field experiment management, data visualization, earth science education

PROFESSIONAL SOCIETIES

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