

NATALIE NICOLE SANCHEZ

Theoretical and Computational Astrophysicist

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EDUCATION

2022	PhD Astronomy	<i>University of Washington, Seattle WA</i>
2018	MSc Astronomy	
	Advisors: Jessica Werk, Tom Quinn, Charlotte Christensen	
2016	MA Physics	<i>Fisk University, Nashville TN</i>
2014	BSc Physics	<i>California Polytechnic University, Pomona CA</i>

APPOINTMENTS

2022–2025	NSF MPS-Ascend Postdoctoral Fellow	<i>California Institute of Technology & Carnegie Observatories</i>
2019–2022	NASA FINESST Future Investigator	<i>University of Washington</i>
2016–2018	Research Assistant	<i>University of Washington</i>
2014–2016	Research Assistant	<i>Fisk University</i>
2014	Summer Undergraduate Research Assistant	<i>Owens Valley Radio Observatory</i>
2012–2014	Undergraduate Research Assistant	<i>California Polytechnic University, Pomona</i>
2012	CAMPARE (Cal-Bridge Summer) Scholar	<i>University of Arizona</i>

GRANTS AND ALLOCATIONS

2022–2025	NSF MPS-Ascend Postdoctoral Research Fellowship	\$300,000
2021	NSF AGEP Research University Alliance - Research Exchange	\$1,500
2020–2023	NASA SMD High-End Computing Allocation	326,000 SBUs on Pleiades \$97,800
2019-2022	Future Investigators in NASA Earth and Space Science and Technology (<i>FINESST</i>) Grant	\$135,000

AWARDS

2023	Carnegie Science DEI Mini Grant	\$5000
2021	Inclusive SciComm Community Cohort	\$375
2019	UW Astronomy Graduate Student Service Award	\$600
2019	Honorable Mention in the Chambliss Astronomy Achievement Award Student Prize Competition for the 227th AAS Meeting	
2015	AAS International Travel Scholarship	\$1300
2014	President's Student Scholarship, Cal Poly Pomona	\$1000
2014	Dr. Vincent E. Parker Physics Scholarship, Cal Poly Pomona	\$1000
2014	SEES LSAMP Research Apprenticeship	\$2000

TRAINING AND PROFESSIONAL ACTIVITIES

Current

APS Division of Astrophysics - Executive Committee Early Career Member	2022–2024
APS Division of Astrophysics Mentor Reviews Program, Co-Creator	2023
Caltech TAPIR Talk Series Organizer	2023–present
RUA Community Engagement Board Member	2023–2024
Cal-Bridge Outreach and Recruitment Chair	2022–present
Cal-Bridge Alumni Council Member	2022–present

University of Washington

Undergraduate Research Mentor	2021–2022
Astronomy on Tap, Seattle, Lead Organizer & Presenter	2016–2021
N-Body Shop Excellence Conference (International), Lead Organizer, SOC	2021
Pre-Major in Astronomy Program (Pre-MAP) Instructor	2020
Pre-MAP Academic Advisor	2018 - 2020
Pre-MAP Graduate Research Mentor	2016 - 2018
Instructor and Program Developer for “Protostars” Middle School Girls’ Summer Astronomy Camp	2017–2019
Pacific Northwest Communicating Science Workshop	2017

Fisk-Vanderbilt Masters-to-PhD Bridge Program

Bridge Student Mentor	2015–2016
Co-Founder, Vice-President, and Outreach Coordinator SACNAS Chapter, Nashville, TN	2015–2016
Astronomy Instructor for Girl Scouts of Middle Tennessee	2015
Astrostatistics Workshop	2015
AAS Congressional Visits Day Participant	2015
Astronomy Ambassador	January 2015 Meeting #225

California Polytechnic State University

Physics Laboratory Assistant Coordinator	9/2013 - 5/2014
Undergraduate Research Assistant	9/2012 - 5/2014
Society of Physics Students President	2013-2014
Society of Physics Students Vice-President	2012-2013

SELECTED INVITED TALKS

UCL Extragalactic Seminar	University College London, October 2022
Carnegie Observatories Lunch Talk Series	Virtual, November 2021
CCAPP and OSU Seminar	Ohio State University, November 2021
KIPAC Tea Talk	Stanford, October 2021
Harvard CfA Seminar	Virtual, September 2021
UC Irvine Astronomy Seminar Series	Virtual, May 2021
MIT Brown Bag Lunch	Virtual, April 2021
Yale Galaxy Lunch	Virtual, November 2020
CGM Workshop	Max Plank Institute, Berlin, October 2019
Cal-Bridge 10th Anniversary Research Symposium	Cal Poly Pomona, August 2019

First Author Publications

The Scatter Matters: SMBH Deviation from $M-\sigma$ Determines the Metal Content of the CGM

N. Nicole Sanchez, Jessica K. Werk, Charlotte Christensen, Michael Tremmel, Thomas Quinn, Jennifer Mead, Ray Sharma, Alyson Brooks (*Submitted to ApJ*)

One-Two Quench: A Double Minor Merger Scenario

N. Nicole Sanchez, Michael Tremmel, Jessica K. Werk, Andrew Pontzen, Charlotte Christensen, Thomas Quinn, Sarah Loebman, Akaxia Cruz, 2021ApJ, 911, 116S. April 2021

Not So Heavy Metals: Black Hole Feedback Enriches The Circumgalactic Medium

N. Nicole Sanchez, Jessica K. Werk, Michael Tremmel, Andrew Pontzen, Charlotte Christensen, Thomas Quinn, Akaxia Cruz, 2019ApJ, 882, 8S. September 2019

Cosmological Hydrodynamic Simulations of Preferential Accretion in the SMBH of Milky Way Size Galaxies

N. Nicole Sanchez, Jillian M. Bellovary, Kelly Holley-Bockelmann, Michael Tremmel, Alyson Brooks, Fabio Governato, Tom Quinn, Marta Volonteri, James Wadsley, 2018ApJ, 860, 20S. June 2018

Additional Publications

The Impact of Cosmic Rays on the Kinematics of the Circumgalactic Medium

Iryna S. Butsky, Jessica K. Werk, Kirill Tchernyshyov, Drummond B. Fielding, Joseph Breneman, Daniel Piacitelli, Thomas R. Quinn, **N. Nicole Sanchez**, Akaxia Cruz, Cameron B. Hummels, Joseph N. Burchett, Michael Tremmel, 2022ApJ, 935, 69B. August 2022

– Contributed original P0 simulation and scientific discussions to project.

Self-Interacting Dark Matter and the Delay of Supermassive Black Hole Growth

Akaxia Cruz, Andrew Pontzen, Marta Volonteri, Tom Quinn, Alyson Brooks, **N. Nicole Sanchez**, Ferah Munshi, Arianna Di Cintio, 2021MNRAS, 500, 2177C. January 2021

– Contributed original GM7 and GM4 simulations as well as analysis code to project.

V409 Tau As Another AA Tau:

Photometric Observations of Stellar Occultations by the Circumstellar Disk

Joseph E. Rodriguez, Joshua Pepper, Keivan G. Stassun, Robert J. Siverd, Phillip Cargile, David A. Weintraub, Thomas G. Beatty, B. Scott Gaudi, Eric E. Mamajek, **N. Nicole Sanchez**, 2015AJ, 150, 32R. May 2015

– Contributed 3mm continuum observations of the V409 Tau system to project.