Shuyi Nie, Ph.D.
Assistant Professor
School of Biological Sciences
Parker H. Petit Institute of Bioengineering and Biosciences
Georgia Institute of Technology

I. Earned Degrees

B.S.	Biology	1998-2002	Peking University, China
Ph.D.	Cell Biology	2002-2007	University of Alabama at Birmingham (Advisor: Chenbei Chang)

II. Employment History

2007-2012	Postdoctoral Scholar, California Institute of Technology (Advisor: Marianne Bronner)
2013-2014	Senior Research Fellow, the Division of Biology and Biological Engineering, California Institute of Technology
2014-present	Assistant Professor, School of Biological Sciences, Georgia Institute of Technology

III. Honors and Awards

2020	Junior Outstanding Undergraduate Research Mentor Award, Georgia Tech
2012	National Institute of Health (NIH) Pathway to Independence Award K99
2012	American Heart Association (AHA) Postdoctoral Fellowship
2009	Travel Award, Society of Developmental Biology Annual Meeting
2006	Best Poster Award, Southeast SDB meeting

IV. Publications

NIH NCBI My Bibliography at https://www.ncbi.nlm.nih.gov/myncbi/shuyi.nie.1/bibliography/public/

Selected Recent Publications

23. Hladyshau, S., Kho, M.V., Nie, S., Tsygankov, D. (2021) Spatiotemporal development of coexisting wave domains of Rho activity in the cell cortex. **Sci. Rep.** 11:19512. doi: 10.1038/s41598-021-99029-x

22. Miao Y, Tian L, Martin M, Paige SL, Galdos FX, Li J, Guttman A, Wei Y, Moonen JR, Zhang H, Ma N, Zhang B, Grossfeld P, Mital S, Wu J, Pu WT, Rabinovitch M, Krane M, Nelson TJ, Nie, S, Wu SM, Gu M (2020) Single-Cell RNA-Seq and Patient-Specific iPSCs Reveal Endocardial Abnormalities in Hypoplastic Left Heart Syndrome. **Cell Stem Cell** 27:574-589. doi: 10.1016/j.stem.2020.07.015

21. Kho MV, Shi H, Nie S (2019) Cdc42 Effector Protein 3 Interacts with Cdc42 in Regulating Xenopus Somite Segmentation. **Frontiers in Physiology**10:542. doi: 10.3389/fphys.2019.00542

20. Grossfeld P, Nie S, Lin L, Wang L, Anderson RH (2019) Hypoplastic left heart syndrome: A new paradigm for an old disease? **Journal Cardiovascular Development and Disease** 6(1). doi: 10.3390/jcdd6010010

19. Garmon TR, Wittling MC, Nie S (2018) MMP14 Regulates Cranial Neural Crest Epithelial-to-Mesenchymal Transition and Migration. **Developmental Dynamics** 247:1083-1092. doi: 10.1002/dvdy.24661

18. Rogers CD, Nie S (2018) Specifying neural crest cells: from chromatin to morphogens and factors in between. **WIREs Developmental Biology** e322. doi: 10.1002/wdev.322

17. Cohen S, Kovari DT, Wei W, Keate R, Curtis JE, Nie S (2018) Cdc42 regulates the cellular localization of Cdc42ep1 in controlling neural crest cell migration. **Journal of Molecular Cell Biology** 10, 376-387. doi: 10.1093/jmcb/mjx044

16. Nie S, Bronner ME (2015) Dual developmental role of transcriptional regulator Ets1 in Xenopus cardiac neural crest versus heart mesoderm. **Cardiovascular Research** 106, 67-75. doi: 10.1093/cvr/cvv043
15. Kerosuo L, Nie S, Bajbai R, Bronner ME (2015) Crestospheres: Long-Term Maintenance of Multipotent, Premigratory Neural Crest Stem Cells. **Stem Cell Reports** 5, 499-507. doi: 10.1016/j.stemcr.2015.08.017

V. Presentations

Invited presentations:

American Association of Anatomy Annual Meeting (in conjunction with Experimental Biology 2020), San Diego CA, USA (April 2021, postponed from April 2020) *[Invited speaker and session chair]*

International Xenopus Conference, Portsmouth, UK (August 2021, postponed from August 2020)

Protein glycosylation in neural crest EMT and migration. **Xenopus Resources and Emerging Technologies Meeting**, Woods Hole, MA (2019)

Protein glycosylation in neural crest EMT and migration. **Southeastern Society of Developmental Biology Meeting**, Birmingham AL (2019) *[Invited speaker and session chair]*

Molecular and cellular mechanisms of neural crest cell migration. **Truett McConnell University**, Cleveland GA (2019)

Cell-cell and cell-matrix interactions during neural crest EMT and migration. **17th International Xenopus Conference**, Seattle WA (2018)

Cell-matrix interaction during neural crest migration. **Southeastern Society of Developmental Biology Meeting**, Kennesaw GA (2017) *[Invited speaker from competitive abstract submission]*

Cdc42 regulates the cellular localization of Cdc42ep1 in controlling neural crest cell migration. **Gordon Research Conference on Neural Crest and Cranial Placodes**, Ventura CA (2017) *[Invited speaker from competitive abstract submission]*

Actin cytoskeletal regulators in neural crest migration and disease. **8th Aquatic Animal Models of Human Disease Conference**, Birmingham AL (2017)

Cdc42 effector protein 1 interacts with Cdc42 during neural crest migration. **Southeastern Society of Developmental Biology Meeting**, St. Augustine FL (2016)

Cdc42 effector protein 1 interacts with Cdc42 during neural crest migration. **Stem Cells, Gene Regulatory Networks and the Evolution of Vertebrates Symposium**, Pasadena CA (2016)

VI. Grants and Contracts

Ongoing Research Support:

Title:	"Coordinated Actin Regulation in Directed Neural Crest Cell Migration"
Agency:	NIH R01 GM136892
Total Amount:	$1,656,900
Role:	PI
Collaborators:	Dr. Tysgankov, Denis
Contract Period:	05/01/2020-04/30/2025
Candidate's Share:	$1,413,525

Title:	"Uncovering the Etiology of Hypoplastic Left Heart Syndrome Using a Novel Frog Model"
Agency:	The Coulter BME Additional Ventures Innovation Fund
Total Amount:	$125,000
Role:	PI
Collaborators:	None
Contract Period:	10/01/2020-09/30/2022
Candidate's Share:	100%

Completed Research Support:

Completed Research Support

Title:	"Unveiling the Mechanisms of Collective Cell Migration through an Integrative Multiscale Study"
Agency:	Petit Institute Interdisciplinary Seed Grant, Georgia Institute of Technology
Total Amount:	$100,000
Role:	PI
Collaborators:	Dr. Tysgankov, Denis
Contract Period:	07/01/2018-06/30/2020
Candidate's Share:	50%

Title:	"Role of actin cytoskeleton regulators in craniofacial development and disease"
Agency:	NIH R00 DE022796
Total Amount:	$750,000
Role:	PI
Collaborators:	None
Contract Period:	07/01/2014-06/30/2019
Candidate's Share:	100%