

GIDI SHEMER, PhD
Teaching Associate Professor/Advisor
Department of Biology
University of North Carolina at Chapel Hill
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EDUCATION

The Technion, Israel Institute of Technology

Ph.D. in Biology, 2002

Dissertation: "Cell fusion and vulva organogenesis in *Caenorhabditis elegans*"

Advisor : Dr. Benjamin Podbilewicz

The Technion, Israel Institute of Technology

M.Sc. in Biology, 1998

Thesis: "Isolation and characterization of the human reduced folate carrier (RFC-1) gene"

Advisor : Dr. Yehuda G. Assaraf

Tel-Aviv University, Israel

B.A. in Biology, 1992

PROFESSIONAL EXPERIENCE

Teaching Associate Professor- Advisor, Department of Biology University of North Carolina, Chapel Hill	2017- Current
Senior Lecturer-Advisor, Department of Biology University of North Carolina, Chapel Hill	2016- 2017
Lecturer-Advisor, Department of Biology University of North Carolina, Chapel Hill	2009-2016
Visiting Lecturer, Department of Biology University of North Carolina, Chapel Hill	2008-2009
Postdoctoral fellow, Department of Biology University of North Carolina, Chapel Hill	2005-2009
Postdoctoral fellow, Department of Biology Technion, Israel	2002-2005
Lecturer, Department of Biology Technion, Israel	2004-2005

OTHER PROFESSIONAL EXPERIENCE

Faculty mentor to GlaxoSmithKline (GSK) transfer scholars	2019- current
Abbey Fellow http://abbeyfellows.unc.edu/	2016- 2021
Director of the SMART summer research program University of North Carolina, Chapel Hill	2013-current
Summer School Administrator for the Biology Department University of North Carolina, Chapel Hill	2012
Director of Undergraduate Research in Biology University of North Carolina, Chapel Hill	2010-current
Founder and Director of the Biology Peer Tutoring program University of North Carolina, Chapel Hill	2010-2017

HONORS

Teaching and Advising Honors

Keynote address- Phi Beta Kappa induction ceremony	2020
Chapman Family award for excellence in undergraduate teaching, UNC <i>A Campus-wide, student-nominated, committee chosen award</i>	2019
The Class of 1996 Award for Advising Excellence <i>A Campus-wide, student-nominated, committee chosen award</i>	2018
Tanner award for excellence in undergraduate teaching, UNC <i>A Campus-wide, student-nominated, committee chosen award</i>	2016
Biology Department Instructor of the Year, UNC <i>A student nominated/chosen award</i>	2015
Spirit of Inquiry Award, Pope Foundation for Higher Education <i>A statewide, student-nominated, committee chosen award</i>	2013
Biology Department Instructor of the Year, UNC <i>A student nominated/chosen award</i>	2013
National Outstanding New Advising Faculty Award, NACADA <i>A nationwide, committee chosen award</i>	2012
The Class of 1996 Award for Advising Excellence <i>A Campus-wide, student-nominated, committee chosen award</i>	2011
Best Lecturer Award of the Technion, Technion, Israel <i>A Campus-wide, student-nominated, committee chosen award</i>	2005
Teaching Assistant Technion Award, Technion, Israel	2002
Teaching Assistant Faculty Award, Technion, Israel	2001
Teaching Assistant Award, Technion, Israel	2000

Research Honors

Pagano Award for best paper by a UNC postdoctoral fellow, UNC	2012
The Teva Prize for a Young Scientist, Society of BMB, Israel	2003
Participation in the Israel delegation to the Lindau Nobel meeting	2003
Landau Award for Outstanding PhD Students, Israel	2000
The Gutwirth Award for Outstanding PhD Students, Israel	2000

TEACHING and ADVISING ACTIVITIES

Biology Faculty Advisor

Advising 2800 majors (including more than 1000 annual individual advising contact sessions), organizing info session, workshops, and running a listserv	2009- current
Leading the Biology summer advising orientations	

Instructor

Biology 252, Human Anatomy and Physiology (250 students each semester) Department of Biology, University of North Carolina, Chapel Hill	2009- current
Biology 202, Molecular Biology and Genetics (250 students every other semester) Department of Biology, University of North Carolina, Chapel Hill	2009- current
Biology 445, Cancer Biology (35 students every other semester) Department of Biology, University of North Carolina, Chapel Hill	2009- current
Biology 395H, Honors Research in Biology (15-18 students each semester) Department of Biology, University of North Carolina, Chapel Hill	2010- current
Biology 296, Directed Reading (1student) Department of Biology, University of North Carolina, Chapel Hill	2010
Biology 205, Cell and Developmental Biology (200 students) Department of Biology, University of North Carolina, Chapel Hill	2008
Biology 069, Developmental Biology (50 students) Department of Biology, Technion, Israel	2004

PROFESSIONAL SERVICE

Department Service

Chairing- Reappointment committee for Teaching Assistant Professor	2022
Chairing- Biology Curriculum Reform	2019- current
Coordinator of the Biology Student-Faculty Forum	2018- current
Coordinator of the Bio Ambassadors Program	2018- current
Chairing- Biology Teaching awards Committee	2015- current
Undergraduate Research Honors Awards Committee	2015- current
Biology Website	2015- current
<i>Responsible for the undergraduate section of the website</i>	
Biology STEM Lecturer search committees (4 total)	2012-2020
Organizer of Biology Academic days	2010-current
<i>Meet and organize departmental lab tours to science prospective students</i>	
Student Services Manager search committee	2010
Biology Department Undergraduate Studies Committee	2009-current
<i>The group advises the faculty on undergraduate policies. Approves courses</i>	
Biology Department Advising Committee	2009-current
Biology Department Graduation Committee	2009-current
<i>Help organize event for 500 students and their families, prepare program</i>	
Faculty sponsor for Undergraduate Research students	2009-current
<i>Sponsor 3-6 students every year. Support their research in non-departmental labs and evaluate their papers</i>	

University Service- Committees

UNC Transfer Student Success Committee	2020-current
UNC General Education Curriculum Implementation- Transfer	2019-2020
UNC General Education Curriculum Reform- Transfer	2018
Search committee- University Registrar	2017
Independent Studies Task Force	2017
<i>Revisited and provided recommendations on the university policy</i>	
QEP 2016 (quality enhancement plan)	2016-2017
<i>Lead the undergraduate research team</i>	
UNC Education Policy committee	2012-2019
<i>Advisory to the Faculty Council on educational policy issues</i>	
UNC Classroom Modernization Advisory Group	2011-2022
<i>Set recommendations to optimize classrooms for educational needs</i>	
UNC Transfer Student Success Committee	2010-2013
<i>Set recommendations to promote success of incoming transfer students</i>	
Search committee- Advising Senior Assistant Dean	2012

Other University Service Activities

More-Than-Just-A-Major summer sessions for incoming students	2018-current
UNC- Office for Undergraduate Research Advisory Board <i>Provides guidance to the Associate Dean of the OUR</i>	2014-current
Faculty Advisor to Carolina Scientific student organization <i>Advised the students who run Carolina Scientific, UNC's premier research magazine</i>	2014-2021
C-STEP Scholars mentor <i>Serves as a one-on-one mentor for 5 students per year in this program</i>	2013-current
Carolina Firsts advocate <i>Provides advocacy for first generation college students</i>	2013-current
Covenant Scholars mentor <i>Serves as a one-on-one mentor for 15 students per year in this program</i>	2012-current
UNC Transfer Student Living-Learning Community Advisory Board <i>Advised on the design and development of the first transfer LLC</i>	2010-2012
UNC HHMI-FSC research Advisory Board <i>Advised on the design and development of the summer research program for covenant scholars. Played active role in the annual selection process</i>	2010-2014
UNC Explore Carolina/Admitted students Day Program <i>Conducts group meetings with prospective science students</i>	2009-current

LEADERSHIP IN TEACHING

Faculty Showcase, Center for Faculty Excellence Presented "Writing higher order questions is correlated with higher order performance."	2021
Biology Department, Haifa University, Israel Delivered workshops on modern teaching approaches to a curriculum committee and faculty and instructors	2018-2019
AAU STEM project Mentoring research faculty in implementing evidence-based teaching practices in large courses	2014-2018
Psychology Department Designed and conducted a workshop on PeerWise and active learning	2014
Biology Department Designed and conducted a workshop with colleagues geared towards implementation of active learning in the classroom	2013
Faculty Showcase, Center for Faculty Excellence Presented "Let the Teach themselves- using PeerWise in your class"	2012
Reinvention Center National Conference, Washington DC Represented UNC in the Writing To Learn in the STEM discipline workshop	2010

GRANTS AND FELLOWSHIPS

NSF-NCLASMAP (\$32,000/ year; involved in the grant writing as the director of SMART)	2019-2024
Human Frontier Science Program (HFSP) Long-term Postdoctoral Fellowship	2005-2008
Cottrell Postdoctoral Fellowship	2005-2007
The Israel Science Foundation Grant (Co-investigator and author of the grant)	2004-2005

PUBLICATIONS

Research Papers

¹Roh-Johnson M., ¹**Shemer G.**, Higgins CD., McClellan JH., Tulu US., Gao L., Betzig E., Kiehart DP., Werts AD., Goldstein B. Triggering a Cell Shape Change by Exploiting Pre-Existing Actomyosin Contractions (2012) **Science** 335(6073):1232-5. [A “Must Read” by The Faculty of 1000]

Sawyer J., Glass S., Li T., **Shemer G.**, White ND., Starostina NG., Kipreos ET., Jones CD., Goldstein B. Overcoming Redundancy: an RNAi Enhancer Screen for Morphogenesis Genes in *C. elegans* (2011) **Genetics** 188: 549-56

Suissa M., Hall DH., Treinin M, ²**Shemer G.**, ²Podbilewicz B. The fusogen EFF-1 controls sculpting of mechanosensory dendrites (2010) **Science** 328: 1285–88 [A “Must Read” by The Faculty of 1000]

Podbilewicz B., Leikina E., Sapir A., Valansi C., Suissa M., **Shemer G.**, Chernomordik LV. The *C. elegans* developmental fusogen EFF-1 mediates homotypic fusion in heterologous cells and in vivo (2006) **Dev Cell** 11: 471-81 [Recommended by The Faculty of 1000; Editor’s choice in Science 314(2006)].

Cassata G., **Shemer G.**, Morandi P., Donhauser R., Podbilewicz B., Baumeister R. *ceh-16/engrailed* compartmentalizes the epidermis of the roundworm *Caenorhabditis elegans* (2005) **Development** 132: 739-49 [Recommended by The Faculty of 1000]

¹**Shemer G.**, ¹ Suissa M, Kolotuev I., Nguyen KCQ., Hall DH., Podbilewicz B. EFF-1 is sufficient to initiate and execute tissue-specific cell fusion in *C. elegans*. (2004) **Curr Biol** 14 :1587-1591 [Recommended by The Faculty of 1000; Previewed in Curr. Biol. 15 (2005); Editor’s choice in Science 305(2004)]

Shemer G. and Podbilewicz B. LIN –39/Hox triggers cell division and represses EFF-1/Fusogen- dependent vulval cell fusion (2002) **Genes&Development** 16: 3136-3141 [Recommended by The Faculty of 1000]

¹Mohler WA., ¹**Shemer G.**, del Campo JJ., Valansi C., Opoku-Serebuoh E., Scranton V., Assaf N., White JG., Podbilewicz B. The type I membrane protein EFF-1 is essential for developmental cell fusion (2002) **Dev Cell** 2: 355-62 [A “Must Read” by The Faculty of 1000; Previewed in Curr. Biol. 12 (2002)]

Shemer G., Kishore R. and Podbilewicz B. Ring formation drives invagination of the vulva in *C. elegans*: Ras, cell fusion and cell migration determine structural fates (2000) **Dev Biol** 221: 233-248

Drori S., Sprecher H., **Shemer G.**, Jansen G., Goldman ID., Assaraf YG. Characterization of a human alternatively spliced truncated reduced folate carrier increasing folate accumulation in parental leukemia cells (2000) *Eur J Biochem* 267:690-702

1 denotes authors that contributed equally to this work

2 denotes co-corresponding senior authors

Review papers

Sawyer JM., Harrell JR., **Shemer G.**, Sullivan-Brown J., Roh-Johnson M., Goldstein B. Apical constriction: a cell shape change that can drive morphogenesis (2010) *Dev Biol* 341: 5-19

Shemer G. and Podbilewicz B. The story of cell fusion: big lessons from little worms (2003) *BioEssays* 25: 672-682

Shemer G. and Podbilewicz B. Fusomorphogenesis: cell fusion in organ formation. (2000) *Dev Dyn* 218: 30-51 [Recommended by The Faculty of 1000]