

**GIDI SHEMER, PhD**  
Teaching Professor/Advisor  
Department of Biology  
University of North Carolina at Chapel Hill  
Chapel Hill, NC 27599  
e.mail: bishemer@email.unc.edu

## **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 Professor- Advisor, Department of Biology**

University of North Carolina, Chapel Hill

2022- Current

### **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

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

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

## PROFESSIONAL SERVICE

### Department Service

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

### University Service- Committees

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

## Other University Service Activities

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

## **LEADERSHIP IN TEACHING**

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

## GRANTS AND FELLOWSHIPS

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

## PUBLICATIONS

### Research Papers

- <sup>1</sup>Roh-Johnson M., <sup>1</sup>**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., <sup>2</sup>**Shemer G.**, <sup>2</sup>Podbilewicz 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]
- <sup>1</sup>**Shemer G.**, <sup>1</sup> 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]
- <sup>1</sup>Mohler WA., <sup>1</sup>**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]