

## Katherine L. Schaefer, PhD

Writing, Speaking, and Argument Program | University of Rochester

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### EDUCATION

- 1996 Carnegie-Mellon University, Pittsburgh, PA  
Ph.D. in Biological Sciences  
*Kinetic and Structural Analysis of a Bacteriophage P22 Antisense RNA Pairing Reaction*
- 1988 University of Illinois, Urbana-Champaign, IL  
B.S. in Biochemistry *With Distinction and Best Senior Thesis*

### POSITIONS

- 2015-present Coordinator, Writing in the Majors (University of Rochester)
- 2011-2015 Writing Workshop Coordinator (University of Rochester)
- 2010-present Lecturer, Specialist in Scientific and Technical Writing (Univ. of Rochester)
- 2007-2010 Assistant Professor (University of Rochester Medical Center)
- 2005-2007 Research Assistant Professor (University of Rochester Medical Center)
- 2002-2005 Postdoctoral Fellow (Boston Medical Center: Lawrence J. Saubermann, MD)
- 1998-2002 Postdoctoral Fellow (U. of Massachusetts Med. School: Leslie J. Berg, Ph.D.)
- 1996-1997 Postdoctoral Fellow (Harvard University: Leslie J. Berg, PhD)
- 1988-1996 Graduate Student (Carnegie-Mellon University: William R. McClure, Ph.D.)
- 1989-1990 Teaching Assistant, Genetics and Biochemistry (Carnegie-Mellon University)

### TEACHING EXPERIENCE: UNDERGRADUATE WRITING

**As a sole instructor** (Writing, Speaking, and Argument Program, University of Rochester)

- 2016 Reading & Writing About Research in Social, Natural, and Applied Sciences (1 course)
- 2015-2016 Research Paper Writing in Biology (2 courses total)
- 2011-present Communicating Your Professional Identity in Biology (10 courses total)
- 2011-2012 Introductory Composition HYBRID ONLINE COURSE (3 courses total)  
*Awarded a Faculty Instructional Technology Initiative Grant for this project*
- 2011 Topics in Drug Development (11 courses total)
- 2009-present Introductory Composition (16 courses total)  
Disease and Society (2009-2016)  
Life, Liberty, and the Pursuit of Wellness (2013-14)  
What Makes a Leader? (2015)

**As an Embedded Writing Specialist within a BIO course** (Dept. of Biology, University of Rochester)

- 2012-present Writing Biological Reviews (5 courses total)
- 2013-present Writing in Ecology and Evolution (5 courses total)

### **TEACHING EXPERIENCE: GRADUATE SEMINARS AND WORKSHOPS ON WRITING**

- 2016 Graduate Writing Project (2 hour workshops)  
     How to Write an Introduction: Creating a Research Space  
     Reading and Writing Arguments: Using “Rhetorical Moves” to Understand Arguments in Your Discipline
- 2013-14 Post-Baccalaureate Research Education Program (75 minute workshops):  
     Basic Writing I and II: Techniques for Organization and Flow

### **TEACHING EXPERIENCE: FACULTY DEVELOPMENT WORKSHOPS TEACHING WRITING IN THE MAJORS**

- 2017 Supporting the BIO Student in “Writing Up Research”
- 2016 Responding to Student Writing
- 2016 Teaching Students to Write Like Biologists: Developing Authentic and Doable Writing Assignments
- 2015 How to Write Like a Biologist: Using Rhetorical Genre Analysis to Help Students Understand Disciplinary Specialization
- 2014 Writing Assignments That Help Students Transfer Writing Knowledge From First Year Writing to Writing in the Disciplines
- 2013 Reaching Backward, Reaching Forward: Building Bridges Across the Curriculum
- 2013 Many Paths into the Library: Required Librarian Interactions in WRT105
- 2012 What I Have Learned From Students About Writing in Biology
- 2012 Incorporating Writing Workshops
- 2011 Upper-Level Writing: Strategies for Improving Writing While Reducing Grading
- 2011 The College Writing Program: A Resource for Writers and Teachers

### **TEACHING EXPERIENCE IN MEDICINE AND SCIENCE**

- 2015 Medical Humanities Seminar (8 week course for medical students)  
     Who Are You, And Who Am I: An Exploration of Doctor and Patient Roles in Disease and Health
- 2011 Conflict Coaching (1 hour talk; CASAC and CPP credit)
- 2006-2010 GI Research Conference (1 hour talks; CME credit) on IBD or colon cancer
- 2009 Signal Transduction (Team Taught): Signaling and the Cytoskeleton (2 lectures)
- 2009-2008 Cancer Biology (Team Taught): Tumorigenesis and the Cytoskeleton (1 lecture)

## PEER REVIEWED PUBLICATIONS (17 total)

### Writing Research Publications

Schaefer, K. L. (2015). "Emphasizing Similarity" but Not "Eliding Difference": Exploring Sub-Disciplinary Differences as a Way to Teach Genre Flexibly. *The WAC Journal*, 26, 36-55.

### Scientific Publications

- Lu, R., Wu, S., Zhang, Y., Xia, Y., Liu, X., Zheng, Y., Chen, H., Schaefer, K.L., Zhou, Z., Bissonnette, M, & Sun, J. (2014). Enteric bacterial protein AvrA promotes colonic tumorigenesis and activates colonic beta-catenin signaling pathway. *Oncogenesis*, 3(6), e105. doi: 10.1038/oncsis.2014.20.
- Rich, A., Gordon, S., Brown, C., Gibbons, S. J., Schaefer, K., Hennig, G., & Farrugia, G. (2013). Kit signaling is required for development of coordinated motility patterns in zebrafish gastrointestinal tract. *Zebrafish*, 10(2), 154-160.
- Naydenov, N. G., Harris, G., Brown, B., Schaefer, K. L., Das, S. K., Fisher, P. B., & Ivanov, A. I. (2011). Loss of alphaSnap induces epithelial cell apoptosis via downregulation of BCL-2 expression and disruption of the Golgi. *The Journal of Biological Chemistry*, 287(8), 5928–5941. doi:10.1074/jbc.M111.278358
- Takahashi, H., Hosono, K., Uchiyama, T., Sugiyama, M., Sakai, E., Endo, H., Maeda S., Schaefer K., Nakagama H., Nakajima, A. (2010). PPARgamma Ligand as a Promising Candidate for Colorectal Cancer Chemoprevention: A Pilot Study. *PPAR Research*, 2010. doi:10.1155/2010/257835
- Zhang L, Sun W., Wang J., Zhang M., Yang S., Tian Y., Vidyasagar S., Pena L., Zhang K., Cao Y., Yin L., Wang W., Zhang L., Schaefer KL, Saubermann L.J., Swarts S.G., Fenton B.M., Keng P.C., and Okunieff P. (2010). Mitigation effect of an FGF-2 peptide on acute gastrointestinal syndrome after high-dose ionizing radiation. *International Journal of Radiation Oncology Biology Physics*, 77(1), 261-268. doi:10.1016/j.ijrobp.2009.11.026
- Harris, G., & Schaefer, K. L. (2009). The microtubule-targeting agent T0070907 induces proteasomal degradation of tubulin. *Biochemical and Biophysical Research Communications*, 388(2), 345-349. doi:10.1016/j.bbrc.2009.08.009.
- Schaefer, K. L. (2008). PPAR gamma inhibitors as novel tubulin-targeting agents. *PPAR Research*, 2008 doi:10.1155/2008/785405.
- Schaefer, K. L., Takahashi, H., Morales, V. M., Harris, G., Barton, S., Osawa, E., . . . Saubermann, L. J. (2007). PPAR gamma inhibitors reduce tubulin protein levels by a PPAR gamma, PPAR delta and proteasome-independent mechanism, resulting in cell cycle arrest, apoptosis and reduced metastasis of colorectal carcinoma cells. *International Journal of Cancer*, 120(3), 702-713. doi:10.1002/ijc.22361
- Takahashi, H., Fujita, K., Fujisawa, T., Yonemitsu, K., Tomimoto, A., Ikeda, I., Masuda T, Schaefer, K., Saubermann, L.J....Nakajima, A. (2006). Inhibition of peroxisome proliferator-activated receptor gamma activity in esophageal carcinoma cells results in a drastic decrease of invasive properties. *Cancer Science*, 97(9), 854-860. doi:10.1111/j.1349-7006.2006.00250.x
- Schaefer, K. L., Wada, K., Takahashi, H., Matsuhashi, N., Ohnishi, S., Wolfe, M. M., . . . Saubermann, L. J. (2005). Peroxisome proliferator-activated receptor gamma inhibition prevents adhesion to the

extracellular matrix and induces anoikis in hepatocellular carcinoma cells. *Cancer Research*, 65(6), 2251-2259.

Schaefer, K. L., Denevich, S., Ma, C., Cooley, S. R., Nakajima, A., Wada, K., . . . Saubermann, L. J. (2005). Intestinal antiinflammatory effects of thiazolidenedione peroxisome proliferator-activated receptor-gamma ligands on T helper type 1 chemokine regulation include nontranscriptional control mechanisms. *Inflammatory Bowel Diseases*, 11(3), 244-252.

Vergara-Silva, A., Schaefer, K. L., & Berg, L. J. (2002). Compartmentalized Eph receptor and ephrin expression in the thymus. *Mechanisms of Development*, 119, S225-S229.

Yelon, D., Schaefer, K. L., & Berg, L. J. (1999). Alterations in CD4-binding regions of the MHC class II molecule I-E-k do not impede CD4(+) T cell development. *Journal of Immunology*, 162(3), 1348-1358.

Schaefer, K. L., & McClure, W. R. (1997a). Antisense RNA control of gene expression in bacteriophage P22 .1. Structures of sar RNA and its target, ant mRNA. *RNA*, 3(2), 141-156.

Schaefer, K. L., & McClure, W. R. (1997b). Antisense RNA control of gene expression in bacteriophage P22 .2. Kinetic mechanism and cation specificity of the pairing reaction. *RNA*, 3(2), 157-174.

Small K, Brennwald P, Skinner H, Schaefer K, and Wise, JA. (1989) Sequence and structure of U5 snRNA from *Schizosaccharomyces pombe*. *Nucleic Acids Research* 17, 9483.

## Reviews, Chapters, and Editorials

1. Schaefer, K. L. (2007). PPAR-gamma inhibitors as novel tubulin-targeting agents. *Expert Opinion on Investigational Drugs*, 16(7), 923-926. doi:10.1517/13543784.16.7.923. **INVITED REVIEW**

## CONFERENCE PRESENTATIONS

### Writing Research Presentations

Working with disciplinary experts: Using a rhetorical genre analysis approach to teaching “writing up your research” in Biology. Presented at the *Conference on College Composition and Communication*, Portland, OR | 2017

A biologist as an embedded WID Specialist: Standing with a foot in two disciplines. Presented at the *Conference on College Composition and Communication*, Tampa, FL | 2015

Understanding how high school experiences with individualized writing feedback shape perceptions of the College Writing Center. Presented at the *Conference on College Composition and Communication*, St. Louis, MO | 2012

### Scientific Research Presentations

Macrophage polarization occurs during the course of inflammation in the DSS and DNBS colitis models. Presented at *Digestive Disease Week 2009*, Chicago, IL | 2009

The tubulin-targeting agent T0070907 promotes tubulin degradation and inactivates the tubulin-sequestering protein stathmin/Op18. Presented at *Digestive Disease Week 2009*, Chicago IL | 2009

Macrophage Polarization is Determined by the Underlying Immunologic Environment in the DNBS Colitis Model. Presented at the *Crohn's and Colitis Foundation Meeting*, Ft. Lauderdale, FL | 2008

LPS-Induced Reductions of Monocyte/Macrophage PPAR $\gamma$  Levels Cause NOD2 Upregulation and Paradoxical Suppression of NOD2 Signaling. Presented at *Digestive Disease Week 2008*, San Diego, CA | 2008

Differences in Apoptotic Activity of Colorectal Cancer Cell Lines to Two Different PPAR $\gamma$ -Inhibiting Compounds that Both Target Tubulin Protein Levels. Presented at *American Association of Cancer Researchers*, Los Angeles, CA | 2007

The Growth Inhibition Effects of Two Chemically Unrelated PPAR $\gamma$  Inhibitor Compounds in Colorectal Cancer Cell Lines are Differentially Modulated by MDR1, Histone Deacetylase Activity, and Oxidative Stress. Presented at *Digestive Disease Week 2007*, Washington, DC | 2007

The PPAR $\gamma$  Inhibitor and Environmental Contaminant Bisphenol-A Diglycidyl Ether (BADGE) Significantly Increases Disease Activity in the DSS Colitis Model. Presented at *Digestive Disease Week 2007* Washington, DC | 2007

Inhibition of the Nuclear Transcription Factor PPAR $\gamma$  Prevents Growth of Colorectal Cancer by Directly Reducing Cellular Tubulin Concentration Presented at *Digestive Disease Week 2006*, Los Angeles, CA | 2006

Two Structurally Dissimilar PPAR $\gamma$  Inhibitor Compounds Each Target Tubulin Protein Levels but Affect Cell Growth Differently. Presented at *American Association of Cancer Researchers*, Washington, DC | 2006

PPAR $\gamma$  inhibition reduces growth of colorectal cancer by a novel cytoskeleton-related mechanism. Presented at *Crohn's and Colitis Foundation 2005*, Miami, FL | 2005

PPAR $\gamma$  inhibitors prevent adhesion of colon epithelial cells and cause apoptotic cell death. Presented at *Digestive Disease Week 2004*, New Orleans, LA | 2004

Thiazolidinediones (TZDs) reduce Th1 mediated intestinal homing in part by reducing Th1 chemokine levels. Presented at *Digestive Disease Week 2004*, New Orleans, LA | 2004

PPAR $\gamma$  Activation Inhibits Interferon-gamma Stimulated STAT1 and MAPKs Phosphorylation in Epithelial Cells. Presented at *Digestive Disease Week 2003* Chicago, IL | 2003

Eph receptor and ephrin expression in the thymus is compartmentalized. Presented at *Keystone 2001: Lymphocyte Activation*, Keystone, CO | 2001

## **HONORS, AWARDS, AND COMPETITIVE FELLOWSHIPS**

2007           Invited review: *Expert Opinion in Investigational Drugs*  
 2004-2007    NRSA Postdoctoral Fellowship  
 1996           Phi Kappa Phi (honor society)  
 1990-1993    NIH Training Grant: Dept. Biological Sciences, Carnegie-Mellon University

## **SERVICE TO THE UNIVERSITY**

2017           Three Minute Thesis judge  
  
 2014-present CIRTl TAR mentor  
                   *NSF-funded initiative for advancing teaching STEM disciplines in higher education*  
 2011-present Undergraduate pre-major advisor  
 2010-present Bi-annual 3 hour workshops on conflict prevention and management for graduate students and postdoctoral fellows (Arts, Sciences & Engineering Professional Development series; in collaboration with *NIH-funded UR BEST program* since 2015)  
 2009-2010    ADR (alternative dispute resolution) steering committee board member  
 2009           Mouse Users Group Committee member  
 2008-2010    Urological Specimen Use Committee outside board member

## **SERVICE TO THE PROFESSION**

2009           Ad-hoc reviewer, RC1 Challenge Grants (experimental therapeutics)  
 2009           Ad-hoc reviewer, Research Grants Council (RGC) of HKSAR (Hong Kong)  
 2007           Ad-Hoc reviewer, Health Research Board, Ireland  
 2006-2008    Ad-Hoc reviewer, *Laboratory Investigations*  
 2008           Ad-Hoc Reviewer, *Clinical Cancer Research*

## **COMMUNITY OUTREACH**

2012-2014    Board Member *Partners in Restorative Initiatives*, Rochester, NY  
 2008-2011    Board Member (2008-10) and Chair (2011) *Crohn's and Colitis Foundation Association* Rochester, NY

## **CONTINUING EDUCATION**

*Courses formally audited with completion of coursework and assessment*

- 2016 WRT251: The Rhetorical Sentence (semester-long course)
- 2009-2010 WRT571: Writing Pedagogy (semester-long course)  
WRT572: Practicum in the Teaching of Writing (semester-long course)

***Faculty Development Workshops and Retreats Attended***

- 2017 Presenter: Assigning and Assessing Multimodal Projects. University of Rochester.  
Presenter: Cheryl Ball
- 2016 Online Learning Community for Inclusive Teaching (CIRTL training summer course with one-day in-person workshop). *NSF-funded initiative for advancing teaching STEM disciplines in higher education*. Presenter: Heather Hackman.
- 2016 Threshold Concepts About Writing: What Do We Know and How Can That Knowledge Inform Our Work? Syracuse University. Presenter: Elizabeth Wardle.
- 2016 Rhetorical Grammar. University of Rochester. Presenter: Craig Hancock.
- 2015 Assignment Design, Genre and Reflection: Three Keys to Helping Students Write Well. Rochester Institute of Technology. Presenter: Kathleen Yancey.
- 2014 Teaching for Transfer. Rochester Institute of Technology. Presenter: Elizabeth Wardle.
- 2014 The Citation Project. University of Rochester. Presenter: Sandra Jamieson.
- 2013 Working with Core Principles of Writing: Using the Spatial and Visually Iconic to Improve Student Writing AND More on Core Principles of Writing. University of Rochester. Presenter: Rei Noguchi.
- 2012 Assessing Writing: Creating Rubrics. Rochester Institute of Technology. Presenter: Mya Poe.
- 2012 Universal Course Design. University of Rochester. Presenter: Molly Boyle.
- 2011 Backwards Design. University of Rochester. Presenter: Barbara Masi.