

ANNIE MARGARET, PHD

TEACHING PHILOSOPHY

I am motivated by questions at the intersections of mental health, technology, addictive design, tribalism, the attention economy, and mindfulness. My teaching and research address psychotechnologies and cognitive states that counteract the negative impact of social media on our mental health and wellbeing. I cultivate contemplative practices and classroom experiences to foster skills critical for human thriving in the rapidly growing attention economy – empathy, sovereignty, metacognition, embodied wisdom, self-inquiry, and interpersonal communication.

RESEARCH FOCUS

- Investigating students' attentional control and relationships with smartphones and social media.
- Exploring the efficacy of contemplative and mindfulness practices in the classroom for decreasing stress and improving student wellbeing
- Investigating how different types of social media behaviors influence perceived social support, self-esteem, and social cognition
- Determining most effective classroom practices for increasing empathy and prosocial behavior

CURRENT TEACHING

INSTRUCTOR

ATLAS Institute, University of Colorado, Boulder | 2018 - Present

- **Meaning of Information Technology** - foundational course investigating the ethical implications of the co-evolution of society, technology, and consciousness, 100+ students
- **Neurohacking** - technology is hijacking our minds - course explores meditation and other psychotechnologies to improve metacognition, self-awareness, meaning-making, and attentional control.
- **Empathy & Technology** - explores the evolution of prosocial behavior, empathy as a finite resource, and how technologies influence this resource. Students ideate and design technologies that are less addictive, more inclusive, and cultivate empathy and meaningful interaction.

CONTACT

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INSPIRING THINKERS

- John Vervaeke
- Brene Brown
- Tristan Harris
- Joe Edelman
- Richard Davidson
- Jamil Zaki
- Jonathan Haidt
- Ursula Goodenough
- Daniel Schmachtenberger
- Kevin deLaplante
- Frank Ostaseski

EDUCATION

NORTHWESTERN UNIVERSITY

Ph.D. 2014

Interdepartmental Biology Sciences (IBIS)

- Molecular Biology, Immunology, Biophysics, Science Communication
- Outstanding Dissertation Award - Awarded by the department to one PhD graduate annually
- Pestka Graduate Award in Cytokine Research: awarded to one graduate student annually to present his or her work at the international Cytokines conference

LUTHER COLLEGE

Decorah, IA

B.A. 2008

Summa cum laude

- Major: Biology
- Minor: Spanish
- Minor: Philosophy & Religion

SKILLS

- Public speaking
- Storytelling, podcasting, and communications expertise
- >5 years meditation practice
- Nonviolent Communication practitioner
- Experimental design (molecular biology, chemistry, cognitive science)
- Project management

INFINITE GAMES

"The finite game is played for the purpose of winning, an infinite game for the purpose of continuing the play... and bringing as many persons as possible into the play."
"Only that which can change can continue."

PREVIOUS TEACHING

INSTRUCTOR

Department of Chemistry and Biochemistry, San Francisco State University | Aug 2015 - May 2017

- **CHEM101: Survey of Chemistry** General, Organic, and Biochemistry. Lecture-based course serving ~120 students.
- **CHEM102: Survey of Chemistry Laboratory**. Wet lab of ~20 students to accompany CHEM101.
- **CHEM390: Contemporary Chemistry and Biochemistry Research** – Writing and science communication based course focused on contemporary chemistry and biochemistry research. Students practice critical thinking, data interpretation, information synthesis and organization, technical and informal writing, and presentation skills.

INSTRUCTOR

Northwestern University | 2014

- **Storytelling and Science** I independently created this freshman seminar focused on learning how to apply the elements of powerful storytelling to scientific discourse, transforming factual scientific discoveries into memorable and influential stories. This seminar provided students with a strong background in the art of storytelling while cultivating important scientific skills, including peer review, critical reading, and independent research.

INSTRUCTOR

Tutorpedia Foundation | Nov 2014 - Jun 2015

- **Middle School STEM Workshops** I designed curriculum for and instructed interactive hands-on STEM workshops for 7th graders. These lessons are part of First Graduate, an after school program serving two groups of ~25-30 7th grade students, who are striving to be the first in their family to go to college.

PREVIOUS RESEARCH

GRADUATE RESEARCH ASSISTANT

Northwestern University | Jul 2009–Jul 2014

Advisor: Dr. Curt Horvath

Thesis research focused on the molecular mechanisms underlying antiviral signal transduction by a family of RNA virus detection proteins, the RIG-I-like receptors. Combined molecular biology, biochemistry, and single molecule imaging to reveal a novel mechanism by which two of these receptors work together to detect foreign RNA and initiate antiviral signaling.

RESEARCH ASSISTANT

Sanford Cancer Research Center | Jul 2008–May 2009

Advisor: Dr. John Lee

HPV-related head and neck cancer.

PUBLICATIONS

- Powell D, Gyory P, Roque R, **Bruns AM**. 2018. The Telling Board: An Interactive Storyboarding Tool for Children. In Proceedings of the 17th ACM Conference on Interaction Design and Children, (IDC '18). ACM, New York, NY 575-580.
- Bruns AM**, Leser GP, Lamb RA, Horvath CM. The Innate Immune Sensor LGP2 Activates Antiviral Signal Transduction by Regulating MDA5-RNA Interactions and Filament Assembly. *Molecular Cell*. 2014 Sept 4.
- Bruns AM**, Horvath CM. LGP2 synergy with MDA5 in RLR-mediated RNA recognition and antiviral signaling. *Cytokine*. 2015 Mar 18.
- Bruns AM**, Horvath CM. Antiviral RNA recognition and assembly by RLR family innate immune sensors. *Cytokine Growth Factor Rev*. 2014 Oct 25.
- Rodriguez KR, **Bruns AM**, Horvath CM. MDA5 and LGP2: Accomplices and Antagonists of Antiviral Signal Transduction. *Journal of Virology*. 2014 May 21.
- Bruns AM**, Pollpeter D, Hadizadeh N, Myong S, Marko JF, Horvath CM. ATP Hydrolysis Enhances RNA Recognition and Antiviral Signal Transduction by the Innate Immune Sensor, LGP2. *Journal of Biological Chemistry*. 2012 Nov 26.
- Vermeer D, Spanos W, Vermeer P, **Bruns AM**, Lee KM, Lee H. Radiation-induced loss of cell surface CD47 enhances immune-mediated clearance of HPV+ cancer. *International Journal of Cancer*. 2013 Jul;133(1):120-9.
- Bruns AM**, Horvath CM. Activation of RIG-I-like receptor signal transduction. *Critical Reviews Biochemistry Molecular Biology*. 2012 Mar-Apr;47(2):194-206. Epub 2011 Nov 8.
- Fishbain S, Prakahs S, **Herrig A**, Elsasser S, Matouschek A. Rad23 escapes degradation because it lacks a proteasome initiation region. *Nature Communications*. 2011 Feb 8.
- Gourronc FA, Robertson M, **Herrig A**, Lansdorp PM, Goldman FD, Klingelutz AJ. Proliferative defects in dyskeratosis congenita skin keratinocytes are corrected by expression of the telomerase reverse transcriptase, TERT, or by activation of endogenous telomerase through expression of papillomavirus E6/E7 or the telomerase RNA component, TERC. *Experimental Dermatology*. 2010 Mar; 19(3):279-88.

RESEARCH PRESENTATIONS

Bruns AM. McMindfulness, Silicon Valley, & The Attention Economy. Rocky Mountain Dialogues for Mindfulness in Higher Education. University of Northern Colorado. Feb 29, 2020. Invited speaker.

Auguste D, Amadei B, Morales AS, Reyes-Estrada M, Torres FL, **Bruns AM.** Building Post-Disaster Resilience in Puerto Rico: Developing A Digital Resource for Mental Health Assessment & Referrals. Technology, Mind, & Society Conference. Washington DC. 2019 Oct 4. Poster Presentation.

Bruns AM. Mindfulness & Technology in the Classroom. Rocky Mountain Dialogues for Mindfulness in Higher Education. University of Colorado, Boulder. March 9, 2019. Invited speaker.

Bruns AM. The Innate Immune Sensor LGP2 Activates Antiviral Signaling by Regulating MDA5-RNA Interaction and Filament Assembly. Cytokines 2014. Melbourne, Australia. October 26-28, 2014. Invited speaker.

Bruns AM. ATP Hydrolysis Enhances RNA Recognition and Antiviral Signal Transduction by the Innate Immune Sensor, LGP2. Cytokines 2012. Geneva, Switzerland. September 10-14, 2012. Poster presentation.

Bruns AM. Single Molecule Analysis of the RIG-I-like Receptor, LGP2. Northwestern Biophysics Symposium. Evanston, IL. June 20, 2012. 20 minute oral presentation.

Bruns AM. Translocation Activity of RLR Family Members. Immune Mechanisms of Virus Control Meeting. USC. December 5-7, 2011. 15 minute oral presentation.

OUTREACH AND COMMUNICATIONS

'**Hack Your Brain or Someone Else Will**' Bold Business Women Podcast with Mara Jackson. June 11, 2019. [LISTEN](#).

Engineering Empathy. Workplace communication training for a team of 15 at Navigant Consulting, Boulder CO. December 12, 2018.

Dawson Summer School. Presented about social media and mental health for 100+ middle school students. Invited Speaker. June 8, 2018. June 11 2020.

COMSCICON-Chicago. August 2015, Invited expert to lead a storytelling as science communication workshop.

COMSCICON. June 2014. Science communication and outreach conference sponsored by Harvard, MIT, and Microsoft dedicated to training the next generation of science communicators (5% acceptance rate)

Founder of Fireside Science. 2013-2015. A storytelling collective for graduate students at Northwestern Universities to share stories about their personal journey and identity formation as scientists.

Lindblom High School Math and Science Academy. Aug 2012-Aug 2013. Mentored high school student visiting Northwestern once a week, explained my research and guided her through carefully prepared hands-on science experiments.

High School Science Club: Evanston Township High School –Northwestern University Sept 2011–Aug 2013. Once a month I designed and led biology laboratory experiments in a local high school classroom, communicating science to underrepresented and challenged individuals who struggle with scientific concepts, including remedial biology and ESL students.

Niles West High School STEM Program Volunteer. Sept 2011–Aug 2013. I mentored a talented high school student during his independent research project by email and informal meetings, helping him identify testable hypotheses, design experiments, and trouble-shoot.

Y.O.U. Summer Science Program May 2013–Aug 2013. I visited middle school students one afternoon a week and led a "Neurosports" science program. This was my most challenging science education activity, as I individually led a group of 5-6 underrepresented and often uninterested students. I gained valuable skills in communicating science with diverse audiences, curriculum flexibility, spontaneity, and building students' trust and respect.

HONORS, AWARDS, FELLOWSHIPS

Outstanding Dissertation Award July 2014.

Awarded to one PhD graduate by the Interdepartmental Biological Sciences Program Northwestern University.

Sydney and Joan Pestka Graduate Award in Interferon and Cytokine Research. Sept 2014.

A \$5,000 grant awarded to one graduate student annually to present his or her work at the international Cytokines conference.

Cellular and Molecular Basis of Disease Training Grant. Mar 2011-Mar 2014.

R.J. McElroy Trust Graduate Fellowship. Sept 2009-Aug 2012.

A \$10,000 fellowship each year for 3 years to graduating liberal arts students to pursue a Ph.D in any field. Two fellows are selected each year from all students attending the fourteen eligible liberal arts colleges in Northeast Iowa.

Dean's List, Luther College. Sept 2004-May 2008.

Regents Scholar, Luther College. Sept 2004-May 2008.

Doris H. Peterson Scholarship, Luther College. Nominated by biology department faculty. Fall 2007.

Beta Beta Beta, Luther College Biology Honor Society. Sept 2006-May 2008.

Sigma Delta Pi, Luther College Spanish Honor Society. Sept 2006-May 2008.

Phi Beta Kappa, Luther College Academic Honor Society. Sept 2006-May 2008.