CURRICULUM VITAE

KATE MacCORD, Ph.D.
Arizona State University
School of Life Sciences
Email: kmaccord@asu.edu

EDUCATION

Undergraduate: University of Pittsburgh, 2004-2009
Bachelor of Philosophy, *summa cum laude*, April 2009

Graduate: University of Cambridge, 2009-2010
Master of Philosophy, November 2010

Arizona State University, 2010-2017
Ph.D. in History and Philosophy of Science, May 2017
Thesis advisors: Jane Maienschein and Manfred Laubichler

Research Interests: I use history and philosophy of science to uncover and explore assumptions in current science in order to transform and accelerate scientific research. My research in HPS is focused primarily on germline, cell lineages, regeneration, and human genome editing. My broader interests include embryology and developmental biology from the 19th century through the present, cell biology, stem cell biology, evolutionary theory, and EvoDevo/DevoEvo.

Teaching Interests: Undergraduate–History of medicine, history of biology, biology and society, philosophy of science and biology, and individual research project supervision. Graduate-History of biology, philosophy of biology, history of medicine, readings & conference, individual research supervision.

PROFESSIONAL

Appointments:

2022-present Teaching Assistant Professor, School of Life Sciences, Arizona State University
2017-present McDonell Foundation Fellow, Marine Biological Laboratory
2020-2022 Instructor, School of Life Sciences, Arizona State University
2017-2019 Adjunct Faculty, School of Life Sciences, Arizona State University
2014-2015 Developing Editor, Harvard University Press
2013-2017 Project Coordinator, Center for Biology & Society, School of Life Sciences

Administrative Experience and Service:

At ASU (2020-present)
2023-present Consultant, Life Science Ethics Program (SOLS)
2023-present Member, Career Track Faculty Advisory Council

2024 Co-Chair, HPS Teaching Assistant Professor Hiring Committee
2024 Co-Chair, Reimagining/Restructuring SOLS Committee
2022-2023 Co-Chair, Career Track Faculty Advisory Council
2022-2023 SOLS Executive Committee (non-voting member)
2023 Member, Associate Director for Instructional Faculty Search Committee
2021-2022 Member, SOLS Director Search Committee
2021-2022 Chair, SOLS JEDI (Justice, Equity, Diversity, and Inclusion) Committee
2020-2021 Member, SOLS JEDI (Justice, Equity, Diversity, and Inclusion) Committee

At MBL (2017-present)

2017-present Program Administrator, McDonnell Initiative
2018-2020 Diversity and Inclusion Committee (founding member)

At ASU (2013-2017)

2013-2017 Project Manager, MBL History Project, Marine Biological Laboratory

Awards and Honors:

2024 History of Science Society Joseph H. Hazen Education Prize (nominated)
2024 Provost Teaching Award (ASU-nominated)
2022, 2023 CLAS Outstanding Teaching Professor Award (ASU-nominated)
2021 School of Life Sciences Faculty Teaching Award (ASU)
2012-2013 Fulbright Scholar [Finland] (ASU)
2009-2010 Gates Cambridge Scholar (University of Cambridge)

Professional Service:

Grant Review

2018, 2022 Ad Hoc grant reviewer, NSF STS Program (SBE Office)

Editorial Service and Manuscript Review

2021-2022 Editor, In Vivo section of *Endeavour*

Reviewer for: *Journal of the History of Biology*, *Biological Theory*, *History and Philosophy of the Life Sciences*, University of Chicago Press (Biological Sciences section)

Professional Societies Service

2023-present Program Co-Chair, International Society for History, Philosophy, and Social Studies of Biology (ISHPSSB)
2019-Present Scientific Committee and Program Committee, Philosophy in Biology and Medicine (PhilInBioMed)
2023 Prize Committee Member, International Society for History, Philosophy, and Social Studies of Biology (ISHPSSB)
2022-2023 Program Co-Chair, Philosophy in Biology and Medicine (PhilInBioMed)
2015-2017 Coordinator, Digital History and Philosophy of Science Consortium

2014-2017 Student representative, Joint Caucus for Socially Engaged Philosophers and Historians of Science (JCSEPHS) for HSS and PSA

Conference and Workshop Organization

2023 "Celebrating Garland Allen" session at ISHPSSB. Toronto.
2023 Philosophy in Biology and Medicine 4. University of Cambridge.
2021 "How can living systems persist: Regeneration, failure, and the future." Panel discussion at ISHPSSB meeting. Oslo.
2020 McDonnell Initiative Microbial Communities/Ecosystems Workshop. MBL.
2019 "Tracing Regeneration" session at ISHPSSB meeting. Online.
2019 MBL-ASU History of Biology Seminar: "Uncovering the Logic of Regeneration across Complex Living Systems". MBL.
2019 54th Joint Atlantic Seminar for the History of Biology. MBL.
2018 "History, Philosophy, and the Life Sciences: The Importance of Bridging Disciplines" round table discussion at the History of Science Society meeting. Seattle.
2018 ISHPSSB Off-year workshop: "Regeneration Across Complex Living Systems: From Regenerating Microbiomes to Ecosystems Resiliency". MBL.
2017 "The Roles of Assumptions in Shaping the History of Science" session at History of Science Society meeting. Toronto.
2015 "NSF Data Management Workshop". National Science Foundation.
2014 "Scientific Objects and the Objects of Science" session at History of Science Society meeting. Chicago.
2013 48th Joint Atlantic Seminar for the History of Biology. MBL.
2012 ISHPSSB Off-Year Workshop: "What's *New* About Systems Biology?". Institute for Systems Biology, Seattle.

Scientific and Professional Society Membership:

2018-present Member, Philosophy in Biology and Medicine (PhilInBioMed)
2016-present Member, Philosophy of Science Association (PSA)
2011-present Member, International Society for the History, Philosophy, and Social Studies of Biology (ISHPPSB)
2010-present Member, History of Science Society (HSS)
2019-2022 Member, American Society for Cell Biology
2015-2020 Member, Pan American Society for Evolutionary Developmental Biology
2007-2011 Member, American Association of Physical Anthropologists (AAPA)

GRANTS

Awarded

2019-2025 "Transforming Discovery: Historians, Philosophers, and Life Scientists Exploring Regeneration"; *James S. McDonnell Foundation*. $528,440. Co-PI: Jane Maienschein. Grant Number: 220020480. 1/1/2019-12/31/2025. Marine Biological Laboratory.

Not Awarded

2020 "Failure and Regeneration in Complex Biological Systems at Scale"; *National Science Foundation*. PI on Subaward to MBL ($561,405). Grant total: $12,488,140. Biology Integration Institute Grant. Submitted 6 February 2020.

2020 "Conceiving the Germline"; *National Science Foundation* ($196,385). PI. Standard Research Grant. Submitted 3 February 2020.

2017 "(Re)Discovering the Human: Regeneration and its implications across complex systems"; *John Templeton Foundation* ($234,782). Co-PI: Jane Maienschein. Submitted August 2017, reapplied 8/2018.

PUBLICATIONS

Books:

In preparation

1. Vervoort, Michel, Lucie Laplane, Eve Gazave, and **Kate MacCord**. *How can we predict and intervene in regeneration?* Chicago: University of Chicago Press.

In print

1. MacCord, Kate. *How does Germline Regenerate?*. Chicago: University of Chicago Press, 2024.
2. Maienschein, Jane, and **Kate MacCord**. *What is Regeneration?* Chicago: University of Chicago Press, 2022.

Refereed Journals:

In preparation

1. MacCord, Kate. "What is a germ cell?" *Journal of Assisted Reproduction and Genetics*

Under review

1. MacCord, Kate. "Let's Talk About Sex…Cell Lineages." *Journal of Biological Theory*

In print

1. MacCord, Kate, and Jane Maienschein. "Studying Regeneration as a Way of Looking Forward." *Journal of the History of Biology* (2024) DOI: https://doi.org/10.1007/s10739-024-09769-5
2. Maienschein, Jane, and **Kate MacCord**. "What is Regeneration? By Jane Maienschein and Kate MacCord: Reply by the Authors." *Studies in the History and Philosophy of Science* 104 (2024): 12-13 DOI: https://doi.org/10.1016/j.shpsa.2024.01.002
3. MacCord, Kate, Jane Maienschein. "Explaining Regeneration: Cells and Limbs as Complex Living Systems, Learning from History." *Frontiers in Cell and Developmental Biology*

(2021) DOI: https://doi.org/10.3389/fcell.2021.734315

4. MacCord, Kate. "The impacts of assumptions on theories of tooth development and evolution at the turn of the nineteenth century." *History and Philosophy of the Life Sciences* 41, no. 1 (2019): 12. https://doi.org/10.1007/s40656-019-0245-2
5. MacCord, Kate, Jane Maienschein. "Understanding regeneration at different scales." *eLife* 8 (2019): e46569. DOI: 10.7554/eLife.46569
6. MacCord, Kate, Guido Caniglia, Jacqueline E. Moustakas-Verho, and Ann C. Burke. "The Dawn of Chelonian Research: Turtles between Comparative Anatomy and Embryology in the 19th Century." *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution* 324, no. 3 (2015): 169-180. DOI: 10.1002/jez.b.22587

Chapters in Edited Volumes:

1. Elliott, Steve, **Kate MacCord**, and Jane Maienschein. "Help with Data Management for the Novice and Well-Seasoned Alike." In *The Dynamics of Science: Computational Frontiers in History and Philosophy of Science*, edited by Grant Ramsey and Andreas De Block. 2022. Pittsburgh, PA: University of Pittsburgh Press.
2. MacCord, Kate. "A Dual Mission: Research and Education as Critical to the Scientific Integrity of the Marine Biological Laboratory," in *Why Study Biology by the Sea?* Eds. Jane Maienschein, Karl Matlin, Rachel Ankeny. 2020. Chicago, IL: University of Chicago Press.
3. MacCord, Kate**,** Jane Maienschein. "The Historiography of Embryology and Developmental Biology," In *The Historiography of Biology* Eds. Michael Dietrich, Mark Borrello, Oren Harman. 2020. Springer Press. Online first: https://doi.org/10.1007/978-3-319-74456-8_7-1.
4. Steinert, Beatrice, **Kate MacCord**. "Visualizing the Cell: Pictorial Styles and their Epistemic Goals in *General Cytology*," In *Visions of Cell Biology: Reflections on Cowdry's Cytology* Eds. Karl Matlin, Jane Maienschein, Manfred Laubichler. 2018. Chicago, IL: University of Chicago Press.
5. MacCord, Kate, Jane Maienschein. "Cells, Development, and Evolution: Teeth at the Intersection of Fields," in *The Darwinian Tradition in Context: Research Programs in Twentieth-Century Evolutionary Biology* Ed. Richard Delisle. 2017. Springer Press.
6. Maienschein, Jane, **Kate MacCord**. "Changing Conceptions of Human Nature," In *Frankenstein* Eds. Jason Robert, Ed Finn, David Guston. 2017. Boston, MA: MIT Press.

Book Reviews:

1. MacCord, Kate. "The Third Lens: Metaphor and the Creation of Modern Cell Biology by Andrew S. Reynolds." *The Quarterly Review of Biology* 95, no. 2 (2020): 163.
2. MacCord, Kate. "Whose view of embryos?." *Studies in History and Philosophy of Biology & Biomedical Sciences C* 53 (2015): 103-106.
3. MacCord, Kate. "The Unpredictable Species: What Makes Humans Unique by Philip Lieberman." *The Quarterly Review of Biology* 89 no. 1 (2014): 58–59. doi:10.1086/675021

Public Audiences:

In preparation

1. MacCord, Kate, and Jane Maienschein. “Regeneration and Concepts of Health” *Aeon*

In print

1. MacCord, Kate. “Sex Cells: The History and Assumptions of Germ Cell Science.” *Natural History* 132 no. 2 (2024): 30-35.
2. MacCord, Kate, Jane Maienschein (April 2018) “Woods Hole Marine Biological Laboratory,” In: *eLS*. John Wiley & Sons, Ltd: Chichester. DOI: 10.1002/9780470015902.a0027989
3. MacCord, Kate, Jane Maienschein, Wes Anderson, Marci Baranski, Florian Huber, Valerie Racine, Jonathan LaTourelle. “The Marine Biological Laboratory (MBL) History Project.” *News from the Profession newsletter of the History of Science Society* (2014) October.
4. MacCord, Kate, Jessica Ranney, Erica O’Neil. “3rd USA Science and Engineering Festival.” *News from the Profession newsletter of the History of Science Society* (2014) July.
5. MacCord, Kate, "Johann Friedrich Blumenbach (1752-1840)". *Embryo Project Encyclopedia* (2014-01-22). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/7512.
6. MacCord, Kate, "Endothelium". *Embryo Project Encyclopedia* (2014-01-28). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/7517.
7. MacCord, Kate, "Ectoderm". *Embryo Project Encyclopedia* (2013-12-02). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/6642.
8. MacCord, Kate, "Mesoderm". *Embryo Project Encyclopedia* (2013-11-26). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/6603.
9. MacCord, Kate, "Endoderm". *Embryo Project Encyclopedia* (2013-11-17). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/6584.
10. MacCord, Kate, "Germ Layers". *Embryo Project Encyclopedia* (2013-09-17). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/6273.
11. MacCord, Kate, "Human Evolution Inferred from Tooth Growth and Development". *Embryo Project Encyclopedia* (2013-03-28). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/4936.
12. MacCord, Kate, "The inductive capacity of oral mesenchyme and its role in tooth development (1969-1970), by Edward J. Kollar and Grace R. Baird". *Embryo Project Encyclopedia* (2013-03-15). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/4218.
13. MacCord, Kate, "Biological Clocks and the Formation of Human Tooth Enamel". *Embryo Project Encyclopedia* (2013-01-31). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/4213.
14. Kearl, Megan, **Kate MacCord**. "On the Induction of Embryonic Primordia by Implantation of Organizers from Different Species" (1924), Hilde Mangold's Dissertation". *Embryo Project Encyclopedia* (2012-12-19). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/4208.
15. MacCord, Kate, "Epithelium". *Embryo Project Encyclopedia* (2012-10-17). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/3946.

16. MacCord, Kate, "Mesenchyme". *Embryo Project Encyclopedia* (2012-09-14). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/3941.

PRESENTATIONS

Invited Seminars:

2023 University of Strasbourg. Ethics and Philosophy of Biology Course. "Conceiving Germ Cells."
2022 Arizona State University. Bioethics Breakfast Club. "Rethinking Regeneration."
2022 Midwestern University Research Day. "What is Regeneration?"
2022 Finding Philosophy in Science. "HPS and Scientific Knowledge."
2021 Indiana University HPS Colloquium. "The Trouble with Germline: Using Integrated History and Philosophy to Explore a Problematic Assumption."
2021 University of Strasbourg. Ethics and Philosophy of Biology Course. "Conceptualizing Development."
2020 University of Strasbourg. Ethics and Philosophy of Biology Course. "Conceptualizing Development."
2020 Arizona State University. Center for Biology and Society Conversation Series. "History and Philosophy and Germline."
2020 Arizona State University. Bioethics Breakfast Club. "A Crucial Flaw in the Genome Editing Debate: The Germline/Soma Distinction."
2019 Konrad Lorenz Institute. "Germline Identification in Metazoans."
2019 Purdue University. "Biology Roundtable."
2014 PhilBioMed Seminar at the Institute for History and Philosophy of Sciences and Technology, CNRS- University of Paris 1. "The Enamel Knot: 100 Years of a Scientific Object."
2013 The Enamel Knot at 100 Symposium. "The Enamel Knot at 100." University of Helsinki.

Scientific Meeting, Speaker:

2024 ASU RegenMed Symposium. "TBD." Tempe, AZ. (Invited speaker)
2023 Sante Fe Institute working group: "Regeneration and Failure". Santa Fe, NM.
2022 History of Science Society. "History for the Future: Regeneration in a Complex World." Chicago, IL. (Speaker)
2022 History of Biology Seminar. "Germline Regeneration." Woods Hole, MA. (Speaker)
2022 Finding Philosophy in Science. "HPS and Scientific Knowledge." Tempe, AZ. (Invited speaker)
2021 History of Science Society. "The Historical Roots of a Flawed Assumption: How the History of Germline Research Reifies and Undermines the Human Genome Editing Debate." New Orleans, LA. Virtual. (Speaker)

2021 Philosophy of Science Association. “Regeneration and the germline.” Baltimore, MD. Virtual. (Speaker)

2021 ISHPSSB. “How can Living Systems Persist: Regeneration, Failure, and the Future.” Virtual. (Speaker)

2019 PhilInBioMed. “Germline Regeneration in Metazoans.” Bordeaux, France. (Invited speaker, session chair, and roundtable panelist.)

2019 ISHPSSB. “Germline Regeneration in Metazoans.” Oslo, Norway. (Speaker and organizer)

2019 History of Biology Seminar. “History and Philosophy of Germ Cells.” Woods Hole, MA. (Speaker)

2018 PhilInBioMed Network. “Parsing the Ways in Which Historians, Philosophers, and Life Scientists Investigate Shared Problems.” Bordeaux, France. (Invited speaker, session chair, and moderator)

2018 History of Science Society. “History, Philosophy, and the Life Sciences: The Importance of Bridging Disciplines.” Seattle, WA. (Speaker)

2018 EuroScience Open Forum. “Crossing Boundaries between Science and History and Philosophy of Science.” Toulouse, France. (Invited panelist and moderator)

2018 Cold Spring Harbor Laboratories Workshop: *Historical Research on Model Organisms in Biology*. Long Island, NY. (Invited speaker)

2018 Center for Philosophy of Science at the University of Pittsburgh Workshop: *Learning from Empirical Approaches to HPS*. “The McDonnell Initiative at the Marine Biological Laboratory.” Pittsburgh, PA. (Invited speaker)

2017 History of Science Society. “The Deep Historical Roots of Development and Evolution: Dental Morphological Evolution.” (speaker)

2017 Mathematical Biosciences Institute Workshop: *The Biological Challenges in Morphogenesis*. “Dental Phenotypic Complexity and the Deep Historical Roots of the Intersection of Morphogenesis and Evolution.” Mathematical Biosciences Institute, Ohio State University. (speaker)

2016 McDonnell Foundation Workshop: *Challenging Assumptions: Integrating the Life Sciences with History and Philosophy of Science*. “Tooth Development.” Marine Biological Laboratory, Woods Hole, MA. Invited speaker.

2016 Philosophy of Science Association. “Research, Outreach, and Education Systems: The HPS Repository, Embryo Project, and MBL History Project.” (speaker)

2016 &HPS6. “The Enamel Knot: At the Intersection of Historicity and Epistemology.” University of Edinburgh (speaker)

2015 Pan American Society for Evolutionary Developmental Biology. “From Dental Evolution in the 19th Century to Developmental Evolution in the 21st.” (poster)

2014 History of Science Society. “A Life History of the Enamel Knot.” (speaker)

2014 Joint Atlantic Seminar for History of Biology. "The Enamel Knot. A history of shifting theoretical and epistemic commitments to morphogenesis during the 20th century borne out in teeth." (speaker)

2013 History of Science Society. "The Enamel Knot. A history of shifting theoretical and epistemic commitments to morphogenesis during the 20th century borne out in teeth." (poster)

2011 International Society for the History, Philosophy, and Social Studies of Biology 2011. "Mammalian dentitions as a case study for phenotypic evolution: Integrating complementary epistemologies." (speaker)

2011 American Association of Physical Anthropology meetings. K MacCord, J Stock. "Morphological Integration between the human os coxa and femur." (poster)

2010 American Association of Physical Anthropology meetings. K MacCord, J Cray. "Population variation in human skeletal growth prior to adolescence." (poster)

2009 American Association of Physical Anthropology Meetings. S Rooney, K MacCord, J Cray, ME Kovacik. "Schmorl's Nodes and the sexual division of labor in a Native American maize horticulturalist society." (poster)

2009 American Association of Physical Anthropology Meetings. K MacCord, J Cray. "The effects of disease and malnutrition on skeletal growth." (poster)

Public Audience, Speaker:

2023 ASU Prep Digital. "Frankenstein Meets Modern Science." (Invited speaker)

2021 ScaleUP: Successful High Enrollment Courses Workshop (ASU). "Online Instruction: Group Discussions and Creative Assessments." (Invited speaker)

2020 MBL Secondary Education Program. "The Marine Biological Laboratory: A Brief History of MBL & Breakthroughs." (Invited speaker)

2019 MBL Secondary Education Program. "The Marine Biological Laboratory: A Brief History of MBL & Breakthroughs." (Invited speaker)

2019 MBL Secondary Education Program. "History & Philosophy of Embryology." (Invited speaker)

2018 MBL Secondary Education Program. "History & Philosophy of Embryology." (Invited speaker)

2018 MBL Secondary Education Program. "The Marine Biological Laboratory: A Brief History of MBL & Breakthroughs." (Invited speaker)

2017 MBL Library Lunchtime Talk Series. "At the Intersection of History, Philosophy, and Science." (Invited speaker)

2017 Center for Biology and Society Conversation Series. "Making the Peaks Higher" with Susan Fitzpatrick (James S. McDonnell Foundation). (Invited speaker)

2016 MBL Library Lunchtime Talk Series. "Cell Lineage @ the MBL" (Invited speaker)

2016 MBL University of Chicago Alumni Talk. “The University of Chicago & The MBL” (Invited speaker)
2015 MBL Library Lunchtime Talk Series. “The MBL History Project.”

TEACHING EXPERIENCE

2021-present. *Biology and Society*. Online, asynchronous. Enrollment: usually ~120 students. School of Life Sciences, ASU.
2020-present. *History of Biology*. Online, asynchronous. Enrollment: usually ~120 students. School of Life Sciences, ASU.
2019-present. *History of Medicine*. Online, asynchronous. Enrollment: usually ~250 students. School of Life Sciences, ASU.
2015 (Fall) *History of Biology* (graduate seminar). Co-Instructor with Jane Maienschein. School of Life Sciences, ASU.
2012 (Sum.) *History of Science*. TA for Thomas Martin. School of Life Sciences, ASU.
2012 (Spr.) *Origins, Evolution, and Creation*. Co-Instructor with Jane Maienschein, Manfred Laubichler, and Guido Caniglia. School of Life Sciences, ASU.
2011 (Fall) *The Darwinian Revolution*. TA for John Lynch. School of Life Sciences, ASU.
2011 (Sum.) *History of Science*. TA for Brad Armendt, Thomas Martin. School of Life Sciences, ASU.
2011 (Spr.) *Origins, Evolution, and Creation*. TA for John Lynch. School of Life Sciences, ASU.
2010 (Fall) *Biology and Society*. TA for Manfred Laubichler and Sharon Hall. School of Life Sciences, ASU.
2008 (Fall) *Human Skeletal Analysis*. Undergraduate Teaching Fellow for Jeffrey Schwartz. Assisted a 4-credit course on human osteology. Ran 12 hours of osteology lab per week. Taught class: “Determining Age from the Human Skeleton”. University of Pittsburgh.
2007 (Fall) *Human Skeletal Analysis*. Undergraduate Teaching Fellow for Jeffrey Schwartz. University of Pittsburgh.

Online (asynchronous) Course Development:

2021 Biology & Society (BIO 311/HPS 340)
2020 History of Biology (BIO 316)
2019 History of Medicine (BIO 318/HPS 331)