

**TENURE AND PROMOTION CURRICULUM VITAE
OF MELISSA McCARTNEY, DEPARTMENT OF BIOLOGICAL SCIENCES**

EDUCATION

Postdoctoral	Children's Hospital of Philadelphia	Neuroscience	2006-2008
Ph.D.	The George Washington University	Neuroscience	2000-2006
B.S.	Binghamton University (SUNY)	Biochemistry	1996-2000

FULL-TIME ACADEMIC EXPERIENCE

Florida International University, Assistant Professor, Biological Sciences 1/2017 - Present

NON-ACADEMIC EXPERIENCE

AAAS	Senior Project Director	2015-2016
<i>Science</i> Magazine	Associate Editor	2009-2015
The National Academies	Policy Fellow	2009

EMPLOYMENT RECORD AT FIU

Assistant Professor 1/2017 - Present

PUBLICATIONS IN DISCIPLINE

* Denotes mentored undergraduate student

#Denotes mentored postdoctoral fellow

+Denotes mentored graduate student

The standards of biology education research are that the senior lead author is the last author of the publication and the first author is the trainee or person who conducted the majority of the research.

Peer Reviewed Publications

1. *Colon, J., Tiernan, N., *Oliphant, S., *Shirajee, A., Flickinger, J., Liu, H., Fransisco-Ortega, J. and **McCartney, M.** Bringing botany into focus: reducing plant blindness in undergraduates through an immersive botanical experience. *Bioscience* (2020) in press.
2. #Chatzikiyriakidou, *K., Manrique, C., *Tacloban, M.J., and **McCartney, M.** Exploring Primary Scientific Literature through the Lens of the 5 Core Concepts of Biology. *CourseSource* (2020) in press.
3. #Knekta, E., #Chatzikiyriakidou, K., and **McCartney, M.** Validation of a questionnaire measuring university students' sense of belonging to and involvement in a biology department. *CBE Life Science Education* (2020) 10.1187/cbe.19-09-0166.
4. Ritchie, T.S. and **McCartney, M.** Providing Transferable, Professional Skills for the Next Generation of Scientific Professionals through an Outreach Opportunity. *Journal of STEM Outreach* (2019) 2: 1-13.

5. #Kararo, M. and **McCartney, M.** Annotated Primary Scientific Literature: A Pedagogical Tool for Undergraduate Courses. *PLOS Biology* (2019) 10.1371/journal.pbio.3000103
6. #Knekta, E. and **McCartney, M.** What Can Departments Do to Increase Students' Retention? A Case Study of Students' Sense of Belonging and Involvement in a Biology Department. *Journal of College Student Retention: Research, Theory & Practice* (2018) 10.1177/1521025118788351
7. **McCartney M.**, *Childers C., Baiduc R.R, and Barnicle K. Annotated Primary Literature: A Professional Development Opportunity in Science Communication for Graduate Students and Postdocs. *Journal of Microbiology and Biology Education* (2018) 19: 19.1.24.
8. Takano, H., McCartney, M., Ortinski, P.I., Yue, C., Putt, M.E., and Coulter, D.A. Deterministic and stochastic neuronal contributions to distinct synchronous CA3 network bursts. *Journal of Neuroscience* (2012) 32: 4743-4754.
9. McCartney, M., Deeb, T.Z., Henderson, T.N., Hales, T.G. Tonically active GABA_A receptors in hippocampal pyramidal neurons exhibit constitutive GABA-independent gating. *Molecular Pharmacology* (2007) 71: 539-548.
10. Davies, P.A., **McCartney, M.**, Wang, W., Hales, T.G., and Kirkness, E.F. Alternative transcripts of the GABA_A receptor ϵ subunit in human and rat. *Neuropharmacology* (2002) 43: 467-475.

Proceedings

1. #Chatzikiyriakidou, K., and **McCartney, M.** Beyond content and skills: misaligned epistemological beliefs for science and biology learning. Proceedings of epiSTEME8: International conference to review research in science, technology, and mathematics education, Mumbai, India, January 3-6, 2020. Homi Bhabha Centre for Science Education, Mumbai, India, 410-418.

Publications in revision

1. #Chatzikiyriakidou, K., *Tacloban, M.J., Concepcion, K., Geiger, J., and **McCartney, M.** Student Interpretation of the Five Core Concepts of Biology: Results from an Introductory Biology Course. *In revision at Journal of Microbiology and Biology Education.*
2. #Chatzikiyriakidou, K., and **McCartney, M.** Undergraduate biology student epistemologies for science and learning in class: Findings and validation of the MBEX survey. *In revision at CBE Life Science Education.*
3. *Acosta, A., *Kasmali, K., *Manrique, C., and **McCartney, M.** Reducing barriers for student engagement with the scientific literature: student perceptions of annotated primary scientific literature. *In revision at PLOS One.*

Publications under review

1. #Chatzikiyriakidou, K, *Kararo, M., and **McCartney, M.** Confidence in Reading Primary Scientific Literature: A Questionnaire to Assess Student Self-efficacy, Performance and Competence, and Motivation in Reading Disciplinary Literature. *Submitted to PLOS One in May, 2020.*

2. *Tacloban, M.J., #Kararo, M., †Wright, A., and **McCartney, M.** The Use of Primary Scientific Literature in the High School Classroom. *Submitted to the Journal of Research in Science Teaching in April, 2020.*

Chapters in Books

1. #Chatzikiyriakidou, K., and **McCartney, M.** Integrating the Five Core Concepts of Biology into Course Syllabi to Advance Student Science Epistemology. Trends in Teaching Experimentation in the Life Sciences. Springer International, *In press.*
2. **McCartney, M.**, and Alberts, B.A. 2016. The *Science* Prize for Inquiry-Based Instruction. In D.H. Murray, S.O. Obare, J.H. Hageman (eds.) *The Power and Promise of Early Research.* American Chemical Society Press, Washington, DC.
3. **McCartney, M.**, Poduska, A., Weibl, R., and Yajima, R. (2012). Science Beyond the Laboratory: The Intriguing Career Paths of Fourteen Scientists and Engineers. In Yager, R, Exemplary Science for Building Interest in STEM Careers. Arlington, VA: NSTA Press.

Education research summaries in *Science* (<https://www.sciencemag.org/author/melissa-mccartney>)

1. A rubric for keeping on (tenure) track. *Science* (2020) 369: 1205.
2. Depression as a lab mate. *Science* (2020) 369: 641.
3. Getting active to increase equity. *Science* (2020) 369: 156.
4. To a postdoc and beyond. *Science* (2020) 368: 1078.
5. Does diversity breed innovation? *Science* (2020) 368: 618.
6. At the center of engagement and learning. *Science* (2020) 368: 151.
7. It takes a village. *Science* (2020) 367: 1058.
8. Not all mentors are equal. *Science* (2020) 367: 753.
9. Sex, physics, and anxiety. *Science* (2020) 367: 261.
10. Graduate students under pressure. *Science* (2019) 366: 1211.
11. Quantifying gender bias. *Science* (2019) 366: 585.
12. Experience versus salary. *Science* (2019) 366: 198.
13. Leaving the lab in graduate school? *Science* (2019) 365: 1132.
14. What's in a name? *Science* (2019) 365: 556.
15. Confronting bias before it happens. *Science* (2019) 365: 246.
16. No more excuses for all-male panels. *Science* (2019) 364: 968.
17. Graduate students under pressure. *Science* (2019) 364: 543.
18. Getting to the core of biology success. *Science* (2019) 364: 250.
19. Careers in STEM start early. *Science* (2019) 363: 1298.
20. Tips for choosing academic mentors. *Science* (2019) 363: 833.
21. Debunking an active-learning myth. *Science* (2018) 363: 362.
22. With role models come persistence. *Science* (2018) 362: 1374.
23. What's good for me is good for you. *Science* (2018) 362: 907.
24. Can you recognize recognition? *Science* (2018) 362: 416.
25. Connecting the bio to the tech. *Science* (2018) 361: 1352.
26. Teaching and research in synergy. *Science* (2018) 361: 765.
27. Taking anxiety out of active learning. *Science* (2018) 361: 376.
28. A CURE for undergraduate research. *Science* (2018) 360: 1418.
29. A (dis)course in postdoc identities. *Science* (2018) 360: 978.

30. You can't be what you can't see. *Science* (2018) 360: 505.
31. A balance between content and process. *Science* (2018) 360: 46.
32. Scientific reasoning on paper. *Science* (2018) 359: 1116.
33. Chemistry assessments go 3D. *Science* (2018) 359: 650.
34. Labs, lectures, and gender differences. *Science* (2018) 359: 174.
35. Downplaying versus embracing differences. *Science* (2017) 358: 1268.
36. Not all STEM teachers work in a classroom. *Science* (2017) 358: 760.
37. More undergraduates, more publications. *Science* (2017) 358: 185.
38. The math behind quantitative success. *Science* (2017) 357: 1110.
39. Correct perceptions, increase engagement. *Science* (2017) 357: 770.
40. Support is needed to leave the lab. *Science* (2017) 357: 367.
41. Social activity: A new dimension in STEM. *Science* (2017) 356: 1348.
42. A learning environment designed for experts. *Science* (2017) 356: 1042.
43. Research experience is not just for students. *Science* (2017) 356: 714.
44. The physics of social butterflies. *Science* (2017) 356: 281.
45. 3D assessment: The future is here. *Science* (2017) 355:1388.
46. STEM = masculine + feminine. *Science* (2017) 355:1036.
47. Skills to pay the bills? *Science* (2017) 355:593.
48. What a (scientific) argument is not. *Science* (2016) 354:595.
49. Instructor gender versus student ratings. *Science* (2016) 354:79.
50. Mentoring as value added. *Science* (2016) 353:1247.
51. The physics of a gender gap. *Science* (2016) 353:788.
52. When leadership meets science. *Science* (2016) 353:361.
53. On the origin of the achievement gap. *Science* (2016) 353:41.
54. Mistakes as a pathway to learning. *Science* (2016) 352: 1187.
55. On-ramp to greater STEM diversity. *Science* (2016) 352: 669.
56. The evolution of teaching evolution. *Science* (2016) 352: 306.
57. How a subtle bias influences retention. *Science* (2016) 351:1278.
58. Critical thinking: Not just for majors. *Science* (2016) 351:678.
59. Flipping for higher exam scores. *Science* (2016) 351:462.
60. Peer + peer = increased learning. *Science* (2016) 351:39.
61. Diversity through ADVANCEment. *Science* (2015) 350:1052.
62. MOOCs: Retention versus achievement. *Science* (2015) 350:648.
63. First-hand accounts of diversity. *Science* (2015) 350:174.
64. Assessing chemistry one class at a time. *Science* (2015) 349:1180.
65. What does one know and not know? *Science* (2015) 349:840.
66. Making sure that inquiry is elementary. *Science* (2015) 349:152.
67. A PORTAAL to active learning. *Science* (2015) 348:1442.
68. Review sessions: From passive to active. *Science* (2015) 348:1104.
69. A stopgap laboratory experience. *Science* (2015) 348:769.
70. Out with tradition and in with inquiry. *Science* (2015) 348:299.
71. A CURE for promoting undergraduate research. *Science* (2015) 347:1434.
72. Achievement viewed through a genetic lens. *Science* (2015) 347:962.
73. Translating clicks into efficiency. *Science* (2014) 346:1477.
74. Follow scientists, not the lab notebook. *Science* (2014) 346:961.
75. One scoring rubric to rule them all. *Science* (2014) 346:713.
76. Mind the (gender) gap...it's still here. *Science* (2014) 346:206.
77. Collaborating on assessments. *Science* (2014) 345:1308.
78. Students produce assessment materials. *Science* (2014) 345:887.

79. Promoting evidence-based teaching. *Science* (2014) 345:528.
80. A research paper in seven moves or less. *Science* (2014) 345:44.
81. Active learning: The twilight of Chem 101? *Science* (2014) 344:1239.
82. Making business students science-savvy. *Science* (2014) 344:986.
83. Mentoring in All Its Varieties. *Science* (2014) 344:450.
84. Owning the Experience. *Science* (2014) 343:1405.
85. Teaching by Retraction. *Science* (2014) 343:950.
86. Time Well Spent? *Science* (2014) 343:581.
87. Self-Efficacy Is the Key. *Science* (2013) 341:1044.
88. Active Investment. *Science* (2013) 341:822.
89. Modeling Conceptual Understanding. *Science* (2013) 341:320.
90. Interdisciplinary Check. *Science* (2013) 341:11.
91. Drawing to Learn. *Science* (2013) 340:903.
92. Motivation + Skill = Success. *Science* (2013) 340:661.
93. Gaming Knowledge. *Science* (2013) 340:526.
94. Testing at a Higher Level. *Science* (2013) 339:1361.
95. Owning Up. *Science* (2013) 339:1126.
96. Stats for Scientists. *Science* (2013) 339:629.
97. Assessing Literacy. *Science* (2013) 339:251.
98. Summing Up Math Standards. *Science* (2012) 338:1512.
99. Quality Assurance. *Science* (2012) 338:1011.
100. Gauging Competitiveness. *Science* (2012) 338:583.
101. How to Train a Leader. *Science* (2012) 338:172.
102. Sustaining Innovative Teaching. *Science* (2012) 337:1274.
103. Making Use of Misconceptions. *Science* (2012) 337:1020.
104. Math + Science = Success. *Science* (2012) 337:504.
105. A Failure to Forget. *Science* (2012) 337:134.
106. Respect My Authority. *Science* (2012) 336:1483.
107. Automate to Educate. *Science* (2012) 336:1080.
108. All in our heads? *Science* (2012) 336:650.
109. Getting the Question Right. *Science* (2012) 336:132.
110. Forget Me Not. *Science* (2012) 335:1410.
111. Getting the Rubric Right. *Science* (2012) 335: 893.
112. Science Illustrated. *Science* (2012) 335: 505.
113. Physical Meets Virtual. *Science* (2012) 335:265.
114. Calendar Effects. *Science* (2011) 334:1324.
115. Less is More. *Science* (2011) 334:878.
116. Advantage: Women. *Science* (2011) 334:435.
117. Easy A. *Science* (2011) 333:1360.
100. Gauging Merit in the Badge. *Science* (2011) 333:500.
101. A Destination in Time. *Science* (2011) 332:1360.
102. All Together Now. *Science* (2011) 332:641.
103. Sizing Up Education Specialists. *Science* (2011) 332:14.
104. Child Scientists. *Science* (2011) 331:378.
105. Wikipedia Goes to Grad School. *Science* (2010) 330:891.
106. Burnout Fallout. *Science* (2010) 330:297.
107. They Aren't Just for E-mail? *Science* (2010) 329:1575.
108. Learning Pays Off. *Science* (2010) 329:259.
109. Get Them Talking. *Science* (2010) 328:1078.

110. All Three R's in Science. *Science* (2010) 328:407.
111. Elementary Partnership. *Science* (2009) 326:1590.
112. Questions, Questions. *Science* (2009) 326:340.
113. Seeds of Knowledge. *Science* (2009) 325:1601.
114. A Matter of Animation. *Science* (2009) 325:921.
115. From Journal to Classroom. *Science* (2009) 325:518.

FUNDED RESEARCH

1. **McCartney, M.** (PI), Zhong, M., and Foster, C (Co-PIs). Pearson Biology Leadership Community Catalytic Grant Program, "Students reading real science: best practices for using annotated primary scientific literature as a pedagogical tool in introductory biology." (Total: \$10,000; McCartney: \$3,600).
2. **McCartney, M.** (PI), Liu, H., Francisco-Ortega, J. (Co-PIs). National Science Foundation, Division of Undergraduate Biology Education, "RCN-UBE Incubator: Incorporating a short but intensive botanical experience into formal college courses to alleviate plant blindness among undergraduate STEM students." (Total: \$53,657; McCartney: \$53,657).
3. CASE Distinguished Postdoctoral Scholar for #M. Kararo (Total: \$25,000; McCartney \$25,000). November 2017-2018.
4. Malcom, S. (PI), **McCartney, M.** (Co-PI). National Science Foundation, Division of Undergraduate Education, "Workshop on the Nature and Practices of Science to Support Educator Guides for *Science* in the Classroom." (Total: \$297,491; McCartney: \$62,490). April 2017-2020.
5. Malcom, S (PI), **McCartney, M.** (Co-PI). National Science Foundation, Division of Undergraduate Education, "*Science* in the Classroom." (Total: \$1,408,138; McCartney: \$35,268). January 2015-2019.

PENDING PROPOSALS

1. Bassham, D. (PI), Walley, J. (Co-PI), and **McCartney, M** (senior personnel). National Science Foundation "Regulatory networks that control autophagy to enable environmental stress resilience in plants." (Total: \$395,807.)
2. Mills, D (PI), Eddy, S., **McCartney, M.**, Kramer, L., Warner, D., and Trexler, J. (Co-PIs). National Science Foundation, S-STEM: Scholarships in Science, technology, engineering, and math, "Collaborative Research: *BioExpress*: Preparing transfer students for diverse 21st century biology careers." (Total: \$3,419,426).

PROPOSALS SUBMITTED BUT NOT FUNDED

1. Gomez, C. (PI), Villar, M.E., and **McCartney, M.** (Co-PIs). National Science Foundation, Division of Undergraduate Education Improving Undergraduate STEM Education, "Improving Undergraduate Education by Using Virtual Reality to Bring Wildlife to the Classroom" (Total: \$299,176).
2. **McCartney, M.** (PI), Ritchie, T. (Co-PI). National Science Foundation, Division of Research on

- Learning, “Informal science communication training as part of STEM graduate degrees: is this the new normal? (Total: \$298,741).
3. #Chatzikiyriakidou, K. (PI), and **McCartney, M.** (Co-PI). National Science Foundation, Division of Undergraduate Education Improving Undergraduate STEM Education, “The BIG picture of biology: Educating undergraduates to be holistic thinkers.” (Total: \$279,338).
 4. **McCartney, M.** National Science Foundation, Division of Research on Learning, “Reading Real Science: Bringing Primary Scientific Literature into high school classrooms.” (Total: \$380,908)
 5. #Chatzikiyriakidou, K. (PI), and **McCartney, M.** (Co-PI). National Science Foundation, Division of Undergraduate Education Improving Undergraduate STEM Education, “The BIG picture of biology: Educating undergraduates to be holistic thinkers.” (Total: \$279,338).
 6. **McCartney, M.** (PI) Ritchie, T.S. (Co-PI), Lake, S., and Kaprelian, K. National Academy of Sciences Standing Committee on Advancing Science Communication Research and Practice Building Capacity for Science Communication Partnership Awards. “Sharing your Science: a model for science communication training for graduate students.” (Total: \$48,217.75).
 7. Laird, A., Brewe, E., and **McCartney, M** (Co-Investigator). National Science Foundation, Education and Human Resources Core Research, “Collaborative Research: Generalizability and individual differences in the neurobiological mechanisms of STEM learning.” (Total: \$2,403,532).
 8. Lee, S. (PI), **McCartney, M.**, Mills, D. (Co-PIs). National Science Foundation, Division of Research on Learning, “Research to Advance Informal STEM Learning and Engagement with Forensic Science (RAISE-FS).” (Total: \$1,061,409)
 9. Kravec, M. (PI), **McCartney, M.**, Eddy, S., Quardokus Fisher, K., and Kramer, L. (Co-PIs). National Science Foundation, S-STEM: Scholarships in Science, technology, engineering, and math, “Collaborative Research: *BioExpress*: Preparing transfer students for diverse 21st century biology careers.” (Total: \$3,419,426).
 10. **McCartney, M.** (PI), Ritchie, T. (Co-PI). National Science Foundation, Division of Research on Learning, “Making Science Approachable: a sustainable model for informal science communication training for graduate students.” (Total: \$299, 371)
 11. **McCartney, M.** (PI), Kramer, L. (Co-PI). National Science Foundation, Division of Research on Learning, “Primary Scientific Literature: Broadening its use as a pedagogical tool among in-service and pre-service high school teachers.” (Total: \$447,941)
 12. **McCartney, M.** (PI). National Science Foundation, Division of Biological Infrastructure, “RCN-UBE Incubator: Students as Annotators: A novel use of primary literature in the classroom.” (Total: \$40,571)
 13. Anderson, E. (PI), **McCartney, M.**, Baraloto, C. (Co-PIs). National Science Foundation Division of Biological Infrastructure, “RCN-UBE Incubator: Understanding and responding to limitations to undergraduate biology education at hispanic serving institutions.” (Total: \$74, 908)

14. Liu, H. (PI), **McCartney, M.**, Hochmair, H., Ackerman, J. (Co-PIs). National Science Foundation Division of Biological Infrastructure, “RCN-UBE Incubator: Botany in Paradise: incubating a resource network to integrate emerging botany education practices and technological tools.” (Total: \$74,765)
15. **McCartney, M.** (PI). National Geographic Society, emerging Explorers, “An Individualized Research Communication Plan for Graduate Students.” (Total: \$12,300)
16. **McCartney, M.** (PI), Hoskins, S. (Co-PI). National Science Foundation, Division of Undergraduate Education, “Primary Scientific Literature: Broadening its use as a teaching and learning tool.” (Total: \$198,440)
17. **McCartney, M.** (PI). National Science Foundation, Division of Research on Learning, “CAREER: Increasing Student Engagement Using Primary Scientific Literature.” (Total: \$797,929)
18. Malcom, S. (PI), **McCartney, M.** (Co-PI). National Science Foundation, Division of Research on Learning, “Science in the Classroom: Bringing Primary Literature to a High School Audience.” (Total: \$449,933)

TEACHING

Course #	Name	Semester	Notes
BSC 1005	Big Ideas in Biology	S 2018 F 2018 S 2019 F 2019	<ul style="list-style-type: none"> • New course • Received GL designation • Received LA funding for 3 semesters • Implemented active learning
BSC 3930	Discovery 2	S 2018 F 2018 S 2019	<ul style="list-style-type: none"> • New course • Implemented active learning
BSC 3910	Research Methods	F 2017	<ul style="list-style-type: none"> • Course redesign • Implemented active learning
BSC 4931	Senior Seminar	S 2020 F 2020	<ul style="list-style-type: none"> • Course redesign • Implemented active learning • Taught two sections

MENTORED STUDENTS AND FELLOWS

Graduate Students

1. Ashli Wright 9/2019 – present
2. Catherine Guinovart 9/2020 – present

Postdoctoral Fellows

1. Dr. Eva Knekta 7/2017 – 7/2018
2. Dr. Matthew Kararo 10/2017– 11/2018
3. Dr. Kyriaki Chatzikyriakidou 9/2018 – 9/2020

Undergraduate Research

1. Marie Janelle Tacloban	4/2017 – present	
2. Chazman Childers	4/2017 – 12/2018	*McNair Fellow
3. Andres Arnavat	8/2017 – 5/2018	
4. Christopher Lam	8/2017 – 10/2018	
5. Amy Acosta	2/2018 – present	
6. Kiana Kasmali	2/2018 – present	*McNair Fellow
7. Chelsey Manrique	2/2018 – 7/2019	
8. Raul Balarezo	2/2018 – 8/2018	
9. Simone Oliphant	5/2018 – 7/2019	
10. Ateev Shirajee	6/2018 – 6/2019	
11. Cynthia Cabrera	6/2018 – 5/2019	
12. Pia Palomino	8/2018 – 12/2018	
13. Nicholas Hernandez	8/2018 – 12/2018	
14. Jessica Colon	1/2019 – present	
15. Hannah Bruce Opris	1/2019 – present	
16. Idara Akpan	1/2019 – 9/2020	
17. Paula Lisazo	3/2019 – 12/2019	
18. Kassandra Concepcion	3/2019 – present	
19. Veronica Garcia	3/2019 – 7/2019	
20. Lilliana Garcia	3/2019 – 7/2019	
21. Michael Ricardo	3/2019 – 7/2019	
22. Miguel Alcrudo	3/2019 – 7/2019	
23. Reuben Castellano	3/2019 – present	
24. Shagayeg Mousavi	3/2019 – present	
25. Valery Mardini	9/2019 – 9/2020	
26. Enza Russoniello	9/2019 – present	
27. Laura Moralejo	9/2019 – present	
28. Mainlyng Duenas	9/2019 – present	*McNair Fellow
29. Yessica Cabrera	9/2019 – present	
30. Brittany Jean-Louis	9/2019 – present	
31. Roxana Alvarez	1/2020 – present	

Graduate Student Committees

1. Sandy Koi	9/2018 – present
2. Krista Donis	3/2020 – present

PRESENTED PAPERS AND LECTURES

* Denotes mentored undergraduate student

#Denotes mentored postdoctoral fellow

Invited Seminars and talks (presenting author is underlined)

International

1. Chatzikyriakidou, K. and **McCartney, M.** Beyond Content and Skills: Misaligned Epistemological Beliefs for Science and Biology Learning. 8th International Conference to Review Research on Science, Technology and Mathematics Education (epiSTEME8), Mumbai, India, January 3-6, 2020.

2. **McCartney, M.** Solidarity in a network: leveraging your peers for a successful graduate school experience. Center for Interdisciplinary Research, Paris, France, September 12, 2019.
3. **McCartney, M.** The next three years: developing a PhD funding proposal. Center for Interdisciplinary Research, Paris, France, September 11, 2019.
4. **McCartney, M.** Being more than a scientist: how your whole self makes you a better scientist. Center for Interdisciplinary Research, Paris, France, September 10, 2019.
5. **McCartney, M.** Finding your scientific voice: preparing your first grant proposal. Center for Interdisciplinary Research, Paris, France, September 6, 2017.
6. **McCartney, M.** Leveraging your scientific skills for an efficient job search. Center for Interdisciplinary Research, Paris, France, September 7, 2017.

USA

1. **#Chatzikyriakidou, K.,** and **McCartney, M.** Designing a Questionnaire for Undergraduate Biology Student Epistemologies for Science. Society to Advance Biology Education Research Meeting, virtual, July 31, 2020.
2. **McCartney, M.** Beyond office hours: what happens when students and professors engage in scientific discourse. Society to Advance Biology Education Research Meeting, virtual, July 17, 2020.
3. **McCartney, M.** Making your personal statement personal. McNair Research Experience for Undergraduates, Miami, FL, June 12, 2020.
4. **McCartney, M.** and *Mainlyng Duenas. An alternative CURE: bringing alternative research experiences into undergraduate classrooms. FIU STEM Transformation Institute Seminar Series. Miami, FL, October 15, 2019.
5. **McCartney, M.** How to summarize your research in 120 ~~words~~ characters. ComSciCon Miami. Miami, FL, October 5, 2019.
6. **McCartney, M.** Presenting yourself as a scientist. CREST CaCHE Research Experience for Undergraduates, Miami, FL, July 19, 2019.
7. **McCartney, M.** Presenting yourself as a scientist. McNair Research Experience for Undergraduates, Miami, FL, June 21, 2019.
8. **McCartney, M.** Integrating Primary Literature into Introductory Courses. FIU Discipline-based Education Research Seminar Series. Miami, FL, April 17, 2019.
9. **McCartney, M.** Primary Scientific Literature in a First Year Biology Course: A Novel Method for Increasing Student Confidence in Reading Scientific Literature. Biology Leadership Conference, Las Vegas, NV, March 7-9, 2019.
10. **McCartney, M.,** Bolger, M., and Tour, E. Foundational Cell Biology Workshop: Using Primary

- Literature to Teach Biology, Association of Cell Biology Annual Meeting, December 9, 2018.
11. **McCartney, M.** Annotated primary scientific literature: a tool for engaging students. FIU Department of Biological Sciences Seminar Series, Miami, FL, November 5, 2018.
 12. **McCartney, M.** Students as Annotators: emulating traditional research experiences. Society to Advance Biology Education Research Meeting, Minneapolis, MN. July 27-29, 2018.
 13. **#Kararo, M.** and **McCartney, M.** Students Reading Real Science. Society to Advance Biology Education Research Meeting, Minneapolis, MN. July 27-29, 2018.
 14. **McCartney, M.** Integrating Primary Literature into the STEM Experience, FIU Latin American and Caribbean Center meeting, Miami, FL, April 19, 2018.
 15. **McCartney, M.** Reading Real Science: Primary Literature and the Public, University of Central Florida, Orlando, FL, March 28, 2018.
 16. ***Childers, C.,** and **McCartney, M.** Translating complex research into an accessible educational tool for undergraduate students. Emerging Researchers Network, Washington, DC, February 22-24, 2018.
 17. ***Tacloban, M. J.,** and **McCartney, M.** Supporting Educators in using Primary Scientific Literature in the STEM Classroom. Emerging Researchers Network, Washington, DC, February 22-24, 2018.
 18. ***Childers, C.,** and **McCartney, M.** Translating complex research into an accessible educational tool for undergraduate students. FIU McNair Scholars Conference, Miami, FL, October 19-20, 2017.
 19. ***Tacloban, M. J.,** and **McCartney, M.** Supporting Educators in using Primary Scientific Literature in the STEM Classroom. FIU McNair Scholars Conference, Miami, FL, October 19-20, 2017.
 20. **McCartney, M.** Annotated Literature in the Classroom, who is learning what? FIU Discipline-based Education Research Seminar Series, Miami, FL, October 16, 2017
 21. **McCartney, M.** Understanding Real Research: Incorporating Primary Literature into Teacher Prep and Coursework, AAAS Teacher Training Workshops, Washington, DC, September 15-16, 2017.
 22. **McCartney, M.** Understanding Real Research: Incorporating Primary Literature into Teacher Prep and Coursework, National Science Foundation NOYCE Summit, Washington, DC, July 20, 2017.

Poster presentations at scientific meetings (presenting author is underlined)

USA

1. ***Duenas, M.,** ***Alvarez, R.,** ***Cabrera, Y.,** ***Castellano, R.,** ***Concepcion, K.,** ***Jean-Louise, B.,** ***Mardini, V.,** ***Moralejo, L.,** ***Mousavi, S.,** ***Russoniello, E.,** **#Chatzikiyriakidou, K.,** and **McCartney, M.** Beyond Office Hours: What Happens When Students and Professors Meet to Discuss Research? National Conference on Undergraduate Research, Bozeman, MT, March 26-28, 2020. (conference postponed)

2. *Alvarez, R., *Cabrera, Y., *Castellano, R., #Chatzikyriakidou, K., and **McCartney, M.** Students as Annotators: emulating traditional research experiences. Undergrad Research FIU, Miami, FL, March 24, 2020. (conference postponed)
3. *Concepcion, K., *Duenas, M., *Jean-Louise, B., *Mardini, V., #Chatzikyriakidou, K., and **McCartney, M.** Novice meets expert: what happens when students talk to faculty about their research? Undergrad Research FIU, Miami, FL, March 24, 2020. (conference postponed)
4. *Moralejo, L., *Mousavi, S., *Russoniello, E., #Chatzikyriakidou, K., and **McCartney, M.** Novice meets expert: what kinds of questions do students ask faculty about their research? Undergrad Research FIU, Miami, FL, March 24, 2020. (conference postponed)
5. *Alvarez, R., *Cabrera, Y., *Castellano, R., *Concepcion, K., *Duenas, M., *Jean-Louise, B., *Mardini, V., *Moralejo, L., *Mousavi, S., *Russoniello, E., #Chatzikyriakidou, K., and **McCartney, M.** Novice meets expert: what kinds of questions do students ask faculty about their research? Biology Leadership Conference, Ft. Myers, FL, February 28-March 1, 2020.
6. Duenas, M., *Alvarez, R., Cabrera, Y., *Castellano, R., *Concepcion, K., *Jean-Louise, B., *Mardini, V., *Moralejo, L., *Mousavi, S., *Russoniello, E., #Chatzikyriakidou, K., and **McCartney, M.** Beyond Office Hours: What Happens When Students and Professors Meet to Discuss Research? Florida Undergraduate Research Conference, Orlando, FL, February 20-12, 2020.
7. *Alvarez, R., Cabrera, Y., *Castellano, R., *Concepcion, K., *Duenas, M., *Jean-Louise, B., *Mardini, V., *Moralejo, L., *Mousavi, S., *Russoniello, E., #Chatzikyriakidou, K., and **McCartney, M.** Novice meets expert: what kinds of questions do students ask faculty about their research? Society for the Advancement of Biology Education Research Regional Meeting, Irvine, CA, January 17-19, 2020.
8. *Kasamii, K., *Acosta, A., and **McCartney, M.** Video introductions from authors can aid undergraduate students in understanding primary scientific literature. FIU McNair Scholars Conference, Miami, FL, October 18, 2019.
9. *Akpan, I.E. *Bruce Opris, H., Ritchie, T. S., and **McCartney, M.** How are STEM graduate students defining science communication? FIU McNair Scholars Conference, Miami, FL, October 18, 2019.
10. *Cabrera, Y., *Castellano, R., *Concepcion, K., *Duenas, M., *Lisazo, P. *Mardini, V., *Moralejo, L., *Mousavi, S., *Russoniello, E., #Chatzikyriakidou, K., and **McCartney, M.** Novice meets expert: what happens when students interview a scientist about their research? FIU McNair Scholars Conference, Miami, FL, October 18, 2019.
11. *Acosta, A., *Kasamii, K., *Manrique, C., and **McCartney, M.** Making primary literature exciting! A method for bringing research into the classroom. FIU McNair Scholars Conference, Miami, FL, October 18, 2019.
12. #Chatzikyriakidou, K., and **McCartney, M.** The Five Core Concepts in Biology (5CCs) in the classroom: Developing Assessment Tools for Student Conceptual Understanding. National CIRT Forum, Philadelphia, PA. October 13-15, 2019.

13. *Kasamii, K., *Acosta, A., and **McCartney, M.** Video introductions from authors can aid undergraduate students in understanding primary scientific literature. McNair Symposium, Miami, FL. September 19, 2019.
14. *Mousavi, S., *Russoniello, E., *Concepcion, K., *Castellano, R., and **McCartney, M.** Novice and expert: what happens when students interview a scientist about their research? Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 26-28, 2019.
15. #Knekta, E., #Chatzikiyriakidou, K. and **McCartney, M.** Validation of a questionnaire measuring university students' sense of belonging to and involvement in a biology department. Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 26-28, 2019.
16. #Chatzikiyriakidou, K., and **McCartney, M.** The Five Core Concepts in Biology (5CCs) in the classroom: Developing Assessment Tools for Student Conceptual Understanding. Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 26-28, 2019.
17. *Kasamii, K., *Acosta, A., and **McCartney, M.** Video introductions from authors can aid undergraduate students in understanding primary scientific literature. Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 26-28, 2019.
18. *Akpan, I.E. *Bruce Opris, H., Ritchie, T. S., and **McCartney, M.** Science Communication: what it is like from a graduate student perspective? Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 26-28, 2019.
19. Geiger, J., *Shirajee, A., *Colon, J., *Oliphant, S., and **McCartney, M.** How Are Tours of Botanical Gardens Enhancing the Student Experience in General Bio II? Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 26-28, 2019.
20. Washburn, M., Ayer Shanks, R., **McCartney, M.**, and Segura-Totten, M. Improving Scientific Literacy in Biology College Students. Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 26-28, 2019.
21. *Kasamii, K., *Manrique, C., *Acosta, A., and **McCartney, M.** Can video interviews with authors aid in understanding primary scientific literature? The Conference for Undergraduate Research at FIU, Miami, FL, April 8, 2019.
22. *Manrique, C., *Acosta, A., *Kasamii, K., and **McCartney, M.** Worksheets can Aid Non-Science Majors in Understanding Primary Scientific Literature. The Conference for Undergraduate Research at FIU, Miami, FL, April 8, 2019.
23. *Acosta, A., *Kasamii, K., *Manrique, C., and **McCartney, M.** Can different learning styles aid in understanding Primary Scientific Literature? The Conference for Undergraduate Research at FIU, Miami, FL, April 8, 2019.
24. *Akpan, I.E. *Bruce Opris, H., Ritchie, T. S., and **McCartney, M.** Science Communication: what it is like from a graduate student perspective? The Conference for Undergraduate Research at FIU, Miami, FL, April 8, 2019.
25. Ritchie, T. S., and **McCartney M.** Annotator Professional Development Training: An outreach

opportunity in STEM education and communication. American Chemical Society National Meeting, Orlando, FL, March 31- April 4, 2019.

26. Washburn, M., Ayer Shanks, R., **McCartney, M.**, and Segura-Totten, M. Improving Scientific Literacy in Biology College Students. University of North Georgia Annual Research Conference, Dahlonega, GA, March 22, 2019.
27. **McCartney, M.** Annotated primary scientific literature: a pedagogical tool for undergraduate courses. Biology Leadership Conference, Las Vegas, NV, March 7-9, 2019.
28. *Kasmaii, K., *Acosta, A., *Manrique, C., and **McCartney, M.** Can video interviews with authors aid in understanding primary scientific literature? Emerging Researchers Network, Washington, DC, February 21-23, 2019.
29. *Shirajee, A., *Colon, J., *Oliphant, S., and **McCartney, M.** How Are Tours of Botanical Gardens Enhancing the Student Experience in General Bio II? Emerging Researchers Network, Washington, DC, February 21-23, 2019.
30. *Hernandez, N., #Chatzikyriakidou, K., and **McCartney, M.** Open –vs- Closed Questions: Which is Better for Measuring Student Learning? The Florida Consortium’s Learning Assistant’s Workshop, Miami, FL, November 17-19, 2018.
31. *Kasmaii, K., and **McCartney, M.** Video introductions from authors can aid non-science majors in understanding primary scientific literature. FIU McNair Scholars Conference, Miami, FL, October 19, 2018.
32. *Acosta, A., and **McCartney, M.** Do science majors and non-science majors approach reading primary scientific literature in the same way?. FIU McNair Scholars Conference, Miami, FL, October 19, 2018.
33. *Manrique, C., and **McCartney, M.** Worksheets can Aid Non-Science Majors in Understanding Primary Scientific Literature. FIU McNair Scholars Conference, Miami, FL, October 19, 2018.
34. *Lam, C., #Kararo, M., and **McCartney, M.** Examining Scientific Literacy Research to Define Research Literacy Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 27-29, 2018.
35. #Kararo, M., and **McCartney, M.** Students Reading Real Science. Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 27-29, 2018.
36. #Knekta, E., and **McCartney, M.** “They make us involve each other with each other” A case study of sense of belonging and involvement for students participating in a special biology program. Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 27-29, 2018.
37. *Tacloban, M. J., and **McCartney, M.** Supporting Educators in using Primary Scientific Literature in the STEM Classroom. Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN. July 27-29, 2018.
38. *Childers, C., and **McCartney, M.** Translating complex research into an accessible educational tool

- for undergraduate students. National Conference on Undergraduate Research, Edmond, OK. April 7, 2018.
39. ***Lam, C., and McCartney, M.** Undergraduates as Annotators: emulating traditional undergraduate research models. FIU Faculty Innovations for Student Success Showcase, Miami, FL, April 3, 2018.
 40. ***Childers, C., and McCartney, M.** Translating complex research into an accessible educational tool for undergraduate students. FIU Undergraduate Research Conference, Miami, FL, March 27, 2018.
 41. ***Childers, C., and McCartney, M.** Translating complex research into an accessible educational tool for undergraduate students. FIU McNair Scholars Conference, Miami, FL, October 19-20, 2017.
 42. ***Tacloban, M. J., and McCartney, M.** Supporting Educators in using Primary Scientific Literature in the STEM Classroom. FIU McNair Scholars Conference, Miami, FL, October 19-20, 2017.
 43. **McCartney, M.** Annotated Primary Literature: A Professional Development Opportunity for Graduate Students in STEM education & communication. Society to Advance Biology Education Research Meeting, Minneapolis, MN. July 21-23, 2017.
 44. **McCartney, M.,** Ruedi, E., and Lake, S. Students Reading Real Science: Primary Literature in the Classroom. Society to Advance Biology Education Research Meeting, Minneapolis, MN. July 21-23, 2017.
 45. **McCartney, M.,** Ruedi, E., and Lake, S. Annotated Primary Literature: Who is learning what? Gordon Conference for Undergraduate Biology Education Research, Easton, MA, July 9-14, 2017.
 46. **Ruedi, E.,** Lake, S., and **McCartney, M.** Science in the Classroom: Using real research to educate yourself and your students. Gordon Conference for Undergraduate Biology Education Research, Easton, MA, July 9-14, 2017.
 47. **McCartney, M.** Annotated Primary Literature: Who is learning what? National Science Foundation INCLUDES Conference: Multi-Scale Evaluation in STEM Education, Knoxville, TN, February 23-24, 2017.

Workshops and Symposia

1. Alleviating Plant Blindness in Undergraduates, a NSF Research Coordination Network Workshop, Organizer and PI, Miami, FL, February 14-15, 2020.
2. ComSciCon Miami, Speaker, Panelist, and Advisor, Miami, FL, October 5, 2019.
3. Graduate Student Bootcamp, Organizer and Presenter, Paris Descartes University PhD Program, Paris, France, September 9-13, 2019.
4. Using Primary Literature to Teach Biology, Organizer and Presenter, Association of Cell Biology Annual Meeting, San Diego, CA, December 9, 2018.

Working Groups

1. FIU Learning Assistant Design Institute (participant), Miami, FL, May 8, 2019.

2. Vision and Change in Undergraduate Biology: Unpacking a Movement, research questions and next steps (participant), Boston, MA. July 8, 2017.
3. Discipline-based Education Research Alliance (participant), Howard Hughes Medical Institute, Chevy Chase, MD. May 8-10, 2017.

PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS

- Invited Keynote Speaker, FIU Faculty Convocation Award Ceremony, October 2020
- FIU CASE Community Engagement Award, October 2019
- Association of Women in Science (AWIS) DC Chapter Leadership Award, November 2016

OFFICES HELD IN PROFESSIONAL SOCIETIES

- Association for Women in Science, Chapters Committee (National level) (appointed)

OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

Department of Biological Sciences

- Member: Department of Biological Sciences, Education Committee, FIU
- Member: Department of Biological Sciences, Diversity Statement Committee, FIU
- Member: Department of Biological Sciences, Instructor Search Committee
- Organizer and Host, 2020 Glaser Distinguished Seminar Series featuring Dr. Bruce Alberts

FIU College of Arts, Sciences, and Education

- Appointment: STEM Transformation Institute, FIU
- Affiliated Faculty: FIU Center for Aquatic Chemistry and Environment
- Affiliated Faculty: FIU Center for Women's and Gender Studies
- Affiliated Faculty: FIU Steven Cruz Institute for Science, Media + Technology
- Executive Committee: Transdisciplinary Bimolecular & Biomedical Sciences Graduate Training Program

Manuscript Review

- Editorial Board Member, *ADVANCE*, open access forum related to *ADVANCE* programs

Journal	2017-2018	2018-2019	2019-2020	2020-2021
<i>CBE Life Sciences Education</i>		1		
<i>Journal of College Science Teaching</i>	4	2	2	1
<i>Journal of Microbiology and Biology Education</i>	1	2	2	2
<i>ADVANCE</i>	1	2	1	1
<i>American Biology Teacher</i>			2	
<i>Course Source</i>				1

Proposal Review

Funder	2017-2018	2018-2019	2019-2020	2020-2021
NSF Division of Undergraduate Education	12		3	
NSF's Graduate Research Fellowship Program			15	
L'Oreal Women in Science proposal review	8	8	8	
International Scientific Committee of the Frontiers in Life Sciences, Paris Descartes University, proposal review	20	20	20	20
NSF Noyce				10

Review Panels

Panel	2017-2018	2018-2019	2019-2020	2020-2021
McNair Scholars application review			5	
Emerging Researchers Network abstract/poster judging	22	20		
SABER abstract review	10	10	10	8
SABER West abstract review			10	
If/then Women in Science application review			10	
BioSkills Guide: expert contributor during validation		1		
HHMI BioInteractive database of questions with an emphasis on higher order questions for introductory biology courses: expert reviewer				1

Reference Letters

Year	# of individuals	Total number of letters
2017-2018	12	17
2018-2019	18	46
2019-2020	17	31
2020-2021	18	22

Consulting

- Norton Publishing, integrating primary scientific literature into undergraduate biology textbooks
- American Chemical Society, graduate student professional development
- American Chemical Society, undergraduate career development

Professional Development

- QUBES Faculty Mentor Network, Using R in education research, online course, Spring 2019
- CourseSource Writing Studio, Preparing a manuscript, one-day workshop, Spring 2020

Research Projects in the Media

The Tropical Garden. A cure for plant blindness? Teaching techniques to connect biology undergrads with plants https://www.fairchildgarden.org/Portals/0/TTG/TTG_Vol.74.No.3%20WEB.pdf

Journal of Animal Ecology Animal Ecology in Focus: Undergraduates create podcasts
<https://animalecologyinfocus.com/2019/12/19/audio-abstracts-podcasts-on-the-journal-papers-scripted-and-recorded-by-undergrads/>

The Fairchild Blog: NSF Funds Project to Engage Undergraduate Students with Plants
<https://www.fairchildgarden.org/News-Pressroom-Media-Center/Blogs/nsf-funds-project-to-engage-undergraduate-students-with-plants>

The Fairchild Blog: NSF funded workshop on plant blindness_
<https://www.fairchildgarden.org/News-Pressroom-Media-Center/Blogs/nsf-funded-workshop-on-plant-blindness>

AAAS.org: Teachers Learn to Use Primary Literature in the Classroom
<https://www.aaas.org/news/teachers-learn-use-primary-literature-classroom>

AAAS.org: Science in the Classroom Prepares Instructors to Teach New Research
<https://www.aaas.org/news/science-classroom-prepares-instructors-teach-new-research>

The Node: Introducing introductory biology students to primary scientific literature: why it matters
<https://thenode.biologists.com/introducing-introductory-biology-students-to-primary-scientific-literature-why-it-matters/education/>

The Ed Tech Roundup: Science in the Classroom
<http://www.edtechroundup.org/reviews/science-in-the-classroom-annotated-research-papers-and-accompanying-teaching-materials>

AGU GeoEdTrek: AAAS puts Science in the Classroom with primary literature
<https://blogs.agu.org/geoedtrek/2017/08/09/aaas-science-in-the-classroom/>