



Office of the Provost

Karen Detlefsen, Ph.D.
Vice Provost for Education

January 25, 2023

To whom it may concern:

This letter is to certify that Kevin L. Galloway (submission ID: 15184) has received approval from the University of Pennsylvania to change the published version of his dissertation from the current version with broken images to the new version with images intact.

University reviewers have compared the two documents and they are exactly the same except for the corrected images.

Sincerely,

A handwritten signature in black ink, appearing to read "Karen Detlefsen", with a stylized flourish at the end.

Karen Detlefsen
Vice Provost for Education