TYLER E. CORK, PH.D.

Biomedical/Electrical Engineering Scientist

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SUMMARY

- A scientist with 10+ years of medical imaging research experience.
- As an engineer, problem-solving is one of my best skills.
- My affinity toward improving the lives of others brought me to the medical field.
- I have a passion for developing robust and reproducible algorithms/scripts.
- I love designing and making GUIs for others to use my code bases with ease.

WORK EXPERIENCE

Imaging Biomarker Co-Op

Merck & Co., Inc.

📅 February 2024 – May 2024 ⚲ South San Francisco, CA

Translational Imaging II | Advisor: Dr. Corey Miller

- Developed a cardiac MRI protocol to evaluate biomarkers on pre-clinical animal models.
- Developed an image processing pipeline to improve temporal and spatial resolution, in addition to improving overall image quality.
- Assessed biomarkers (cardiac strain) from the developed MR protocol using the enhanced images from the image processing pipeline.

RESEARCH EXPERIENCE

Postdoctoral Researcher

Stanford University

📅 January 2026 – Present ⚲ Stanford, CA

Radiological Sciences Laboratory | Advisor: Dr. Daniel B. Ennis

- Oversaw geometric restoration, image acquisition, and image processing of explanted pediatric congenital heart disease specimens.
- Designed pericardial molds from *in vivo* cardiothoracic computed tomography (CT) exams to restore physiological boundary conditions for high resolution *ex vivo* cardiac diffusion tensor imaging (DTI).

Graduate Research Assistant

Stanford University

📅 September 2018 – December 2025 ⚲ Stanford, CA

Radiological Sciences Laboratory | Advisor: Dr. Daniel B. Ennis

- Research focused on cardiac MRI using diffusion tensor imaging (DTI) in human subjects.
- Optimize cardiac DTI sequence parameters for acquisition and improve quantitative results for clinical translation.
- Built an entire semi-automatic post-processing pipeline (Cardiac Diffusion in Python – CarDpy), including package modules with optional interactive GUIs for ease of use.
- Mentored new graduate students and integrated my pipeline into their workflow.

Graduate Student Researcher

University of California, Los Angeles

📅 July 2017 – September 2018 ⚲ Los Angeles, CA

Magnetic Resonance Research Laboratory | Advisor: Dr. Daniel B. Ennis

EDUCATION

Ph.D. in Bioengineering

Stanford University

📅 August 2018 – December 2025

Getting to the Heart of It: Robust Data Acquisition and Analysis for Cardiac Diffusion Tensor Imaging

M.S. in Bioengineering

University of California, Los Angeles

📅 September 2017 – June 2018

M.S. in Electrical Engineering

The Catholic University of America

📅 August 2015 – May 2017

B.S. in Biomedical Engineering

The Catholic University of America

📅 August 2011 – May 2015

PROGRAMMING

Primary	Python (8+ years)
Secondary	MATLAB (10+ years)
Other	C# (1+ years)

CORE 🐍 LIBRARIES

OpenCV   Pydicom   NumPy
simpleITK   tkinter   SciPy
scikit-image   scikit-learn
Keras   TensorFlow

TECHNICAL SKILLS

Solidworks   AutoCAD
3D Printing   Final Cut Pro
OsiriX   Horos   RadiAnt
MITK Workbench   Meshmixer

SOFT SKILLS

Teamwork   Communication
Leadership   Problem Solving
Hard-working   Mentoring

- Research focused on cardiac MRI in large animal (porcine) experiments.
- Generated a workflow using *in vivo* imaging and 3D printing (FDM) to accurately restore *ex vivo* cardiac geometries.

Post-Baccalaureate IRTA Trainee

National Institutes of Health

📅 September 2015 – May 2017   📍 Bethesda, MD

Laboratory of Diagnostic Radiology Research | Advisor: Dr. David A. Bluemke
- Research focused on clinical translation and feasibility of the world's first photon-counting computed tomography (PCCT) scanner.
- Experiments included phantoms (technical developments), large animals (canines), and humans.
- Built post-processing techniques (Matlab) for mono/multi-modal (CT-CT/CT-MRI) experiments and built semi-automated pipelines for quantification.

PUBLICATIONS

Selected Peer-Review Journal Publications (2 of 18)

- **Cork T.E.**, Middione M.J., Loecher M., Liao C., Setsompop K., Ennis D.B. "Evaluation of EPI-Based Distortion Correction Techniques for Cardiac Diffusion Tensor Imaging". *NMR in Biomedicine*, vol. 38, no 11, 2025, p. e70147. doi: 10.1002/nbm.70147
- Kolawole F.O., Wang V.Y., Freytag B., Loecher M., **Cork T.E.**, Nash M.P., Kuhl E., Ennis D.B. "Characterizing Variability in Passive Myocardial Stiffness in Healthy Human Left Ventricles using Personalized MRI and Finite Element Modeling". *Scientific Reports*, vol. 15, no. 1, 2025, p. 5556. doi: 10.1038/s41598-025-89243-2

Selected Peer-Review Conference Publications (1 of 9)

- **Cork T.E.**, Hannum, A.J., Loecher M., Perotti, L.E., Ennis D.B. "Evaluating the Effect of Post-Processing Steps When Analyzing Cardiac Diffusion Tensor Data". *Functional Imaging and Modeling of the Heart*, 2025, pp. 137–149. doi: 10.1007/978-3-031-94562-5_13

Selected Scientific Abstracts (2 of 42)

- **Cork T.E.**, Hannum A.J., Loecher M., Ennis D.B. "Evaluation and Robustness Assessment of Cardiac Diffusion in Python (CarDpy)". *ISMRM 33rd Annual Meeting*, Honolulu, Hawaii, United States of America, 2025.
- **Cork T.E.**, Hannum A.J., Loecher M., Ennis D.B. "Evaluation of an Open-Source Toolbox for Cardiac Diffusion in Python (CarDpy)". *SCMR 28th Annual Meeting*. Washington, DC, United States of America, 2025.

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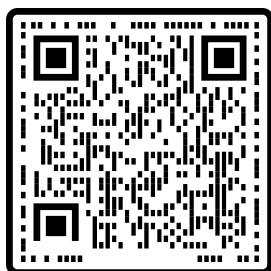
Project Management

LIFE PHILOSOPHY

"Pleasure in the job puts perfection in the work."
- Aristotle

MOST PROUD OF

🏆 **Courage I had**
Turn a career-ending sports injury into a passion for medical imaging.

📖 **Personal Growth**
Move across the country on my own to chase my Ph.D. dreams.

💗 **Persistence & Loyalty**
Transfer Ph.D. programs when the lab announced it was moving.

REFERENCES

Dr. Daniel B. Ennis
@ Stanford University
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Professor,
Department of Radiology
Director of Radiology Research,
VA Palo Alto Health Care System

Dr. Luigi Perotti
@ University of Central Florida
✉ luigi.perotti@ucf.edu

Assistant Professor,
Department of Mechanical & Aerospace

Dr. Matthew J. Middione
@ GE HealthCare
✉ matthew.middione@ge.com

Director of National Accounts,
Research & Scientific Affairs