

Dr Laura Prichard

Advanced Analytics Manager in Healthcare

Manager & Data Scientist in healthcare with astrophysics PhD, 12 years tech. experience, responsible AI expert, excellent communication & leadership skills.

EMPLOYMENT

- Advanced Analytics (AA) Manager, UCLA Health**, Nov 2024–present
- Senior Data Scientist, UCLA Health**, June 2022–Nov 2024 (promoted Aug 2023)
 - Custom development of AI & machine learning models for healthcare use cases
 - Responsible AI expert, building processes & promoting ethical AI practices
- Staff Scientist, Space Telescope Science Institute (STScI)**, July 2021–June 2022
- Postdoctoral Researcher, STScI**, September 2018–July 2021

EDUCATION + AWARDS

- DPhil/PhD in Astrophysics, University of Oxford**, October 2014–June 2018
 - Doctoral Researcher (DR) Honorable Mention Award, DR Awards, 2018
 - Hintze Scholarship, University of Oxford, 2014–2018
- MPhys & BSc (first class honors), University of Leeds**, 2010–2014
 - Bolton Prize in Astrophysics for top graduating student, 2014
- Exchange year BSc/MPhys, University of California, Santa Cruz**, 2012–2013

TECHNICAL CERTIFICATIONS

- Databricks Generative AI (GenAI) Engineering**, completed training Sep 2024
- Databricks Machine Learning (ML) Associate**, June 2023 ([link](#))
- John Snow Labs Natural Language Processing (NLP)**, Feb 2023 ([link](#), [link](#), [link](#))
- Epic Clinical Data Model**, November 2022 (credential ID: 340241761)
- IBM Machine Learning Specialization**, February 2022 ([link](#))

SKILLS SUMMARY

- Leadership:** Building connections, strategic & growth mindset, adaptability.
- Project Mgmt.:** Led & managed many AI & other initiatives, used agile principles.
- Collaboration:** Excel at working in diverse, cross-cultural, dynamic teams.
- AI & ML:** Experience in GenAI & LLMs. Expert in NLP, ML, bias/fairness testing.
- Innovation:** Expert in exploration & evaluation of new AI/ML methods & tools.
- ML Operations:** Expert in building recs. for leaders on tools/processes to adopt.
- Responsible AI:** Program, workflow, policy development, initiative management. Model documentation, ML/AI education & communication, resource creation.
- Software:** 12 yrs coding experience, building software tools for complex tasks.
- Data Exploration:** Handle large electronic health data sets w. SQL Server & Epic tools. EDA, cleaning, feature creation. Advanced stat. analysis, hypothesis testing.
- Technical Comms:** 32 publications, 4 as lead author, 600+ citations, 4 posters.
- Talks:** 23 global talks (UCLA, Harvard, Yale, Oxford, STScI) to diverse audiences.

LEADERSHIP + SERVICE ROLES

- MOR Associates UC System Lead From Where You Are Program**, 2024 ([link](#))
- UCLA HR Management Development Certificate**, 2023–2024
- Co-Chair of Inclusive Astronomy 2 Local Organizing Committee, STScI**, 2019, published [recommendations](#), received STScI Diversity, Equity & Inclusion Award
- Led Women in Astronomy Forum initiative, STScI**, [Astro2020 white paper](#)
- Elected member of Invision Working Group, STScI**, 2018–2020
- Elected President of Christ Church Graduates, University of Oxford**, 2015–'16

CONTACT + LINKS

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- LinkedIn:** [linkedin.com/in/lprichard/](https://www.linkedin.com/in/lprichard/)
- GitHub:** github.com/lprichard

HIGHLIGHTED SKILLS

Top Soft Skills:

- Leadership/strategic thinking
- Project leadership/mentoring
- Collaboration/making connections
- Communication/AI literacy
- Innovation/problem solving

Top Technical Skills:

- Expert in:
 - Python/Jupyter/pandas/git/shell
 - Machine learning/modeling/NLP
 - Databricks/DevOps platforms
 - Bias/fairness model evaluations
 - Statistical analysis/visualization
- Experience in:
 - GenAI/LLMs, APIs & evaluation
 - Epic Clarity, Caboodle, Cogito
 - IDL/SQL/C++/HTML/Tableau

SUPERVISION + MENTORING

- Supervisor/co-sup. to 4 grad/undergrad interns (on data sci./res AI projects)**, UCLA Health, '22-'24
- Supervisor to undergrad intern**, Maria Mitchell Observatory, '19-'21
- Mentor to three interns**, UCSC Summer Internship Program, 2016
- Tutored 6 Oxford MS students**, '16

PUBLIC IMPACT

- Public talks:** e.g., [UCLA Data Day 2023](#), [Hubble YouTube](#), [SAZERAC](#)
- Invited talks:** [Biomedical AI in Action](#) (Dec 24), [UCLA Anderson Healthcare Tech](#) (Apr 24)
- Press:** [Independent on Sunday](#) (2015), [Yesterday's Island](#) (2019), [Christ Church Matters](#) (p46, 2021)
- Volunteering:** [LA County Science Fair Review Committee](#) (2023), [Thread](#) (2020–23), [DataKind](#) (21)

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HEALTHCARE EXPERIENCE

Leadership & Management

- Manage four full-time Data Scientists on the Advanced Analytics team including organizing the team's deliverables, workflow, prioritization, and advancing UCLA Health's AI capabilities and adoption in alignment with strategic goals.
- Oversee the AA team in developing, validating, and deploying AI models, standardize scalable ML operations processes, manage team growth, and ensure ethical, compliant AI integration within UCLA Health.
- Supervised four interns at UCLA Health: created projects, assigned tasks, set deadlines, held regular one-on-ones, coached skills & mentored, provided feedback, encouraged independence, ownership, creative & strategic thinking.
- Team management: built AA's onboarding guide & supported team admin, helped onboard staff & interns, managed key initiatives (custom model development, eGoals deliverables), encouraged collaboration & knowledge sharing.
- Comfortable coordinating teams to align with mission, elevating voices, strategic assignments, setting deadlines, tracking resources, removing obstacles, ensuring manageable workloads & delivering quality outputs on schedule.
- Experience coordinating large committees on critical initiatives, requiring uniting teams around a common vision.
- Equity, diversity, & inclusion expert, spear-headed numerous campaigns & initiatives to foster EDI in my organizations.

Data Science in Healthcare

- Designed, executed, communicated deliverables & led teams on high-impact strategic AI initiatives.
- Led & contributed to 12 ML/AI projects & feasibility explorations, & formed actionable recommendations from each.
- Lead developer on Cancer Staging project, using NLP tools/methods to extract information & predict cancer stage.
- Supervised interns on an LLM mini project proof-of-concept for the Cancer Staging use case with promising results.
- Led Epic InBasket Generated Draft Replies tool evaluation, generating & comparing LLM-to-provider message metrics.
- Technical lead on the Kidney Care model migration to deploy it on Databricks for use in a healthcare setting.
- Developed baseline predictive model for Blood Inventory project using state-of-the-art time series techniques.
- Led research & ideation of several custom model development project ideas (e.g., Blood Inventory, Cancer Staging, Medicaid Hierarchical Condition Category, Hospital Consumer Assessment of Healthcare Providers & Systems).
- Designed the AutoML Pilot project, provided ML training & supported end users in developing ML project ideas.
- Provided data science support for clinical ML project feasibility testing (e.g., Emergency Department Triage).
- Performed data exploration, cleaning, feature engineering, analysis on clinical data for custom built predictive models.
- Designed & developed model output visualizations for monitoring & stakeholder review (Tableau, Python; Pat. Census)
- Led exploration of ML/AI platforms & tools, tested functionality, investigated & reported on innovation opportunities.
- Developed & implemented ML operations workflows, guidelines, documentation & standard operating procedures.
- Regularly present to stakeholders/teams on ML/AI project updates & adopt agile project management principles.

Responsible AI in Healthcare

- Built workflows, tasks & roles to create a comprehensive responsible AI program that could scale.
- Contributed to the development & facilitation of the Health AI Council (HAIC) model review process.
- Established model documentation templates & workflows to align with the model review process.
- Collaborated with project sponsors, developers & vendors on completing documentation for 16 models.
- Guided 9 project teams through a HAIC model review & handed off process to Product Management to scale ops.
- Presented to many internal & public audiences on responsible AI (e.g., Data Day, Biodesign, CIF, PATT, Anderson).
- Developed responsible AI resources, talks & demos to increase ML/AI knowledge (e.g., ML glossary, Collibra page).
- Supervised two interns on the creation of valuable responsible AI resources & processes to support operations.

HEALTHCARE PUBLICATIONS (Google Scholar link)

- *'Poetic or Prosaic? Evaluating the Linguistic Quality of AI-Generated Draft Replies to Patient Portal Messages'*, in prep.
- *'Novel approach to implementing natural language processing for clinical staging of non-small-cell lung cancer'*, 5/2024, JCO/ASCO Abstract 42, 16
- *'Early prediction of end-stage kidney disease using electronic health record data: a machine learning approach with a 2-year horizon'*, 4/2024, JAMIA Open, 7(1), ooae015.

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ASTROPHYSICS EXPERIENCE

Leadership & Management

- Co-chaired the Inclusive Astronomy 2 Local Organizing Committee (LOC), overseeing planning, logistics, and execution (April 2019–July 2020). Led publication of recommendations and earned the STScI DEI Award.
- Led the Women in Astronomy Forum initiative (2018–2019) and co-authored an Astro2020 white paper.
- Served on the Invision Working Group at STScI (2018–2020), co-created the STScI Outreach Mentor Program, and ran diversity, equity, and inclusion initiatives.
- Elected President of Christ Church Graduate Common Room (GCR), University of Oxford (2015–2016), managing a committee of 30 people and successfully campaigning for increased inclusion.
- Served on hiring committees, supported the Telescope Allocation Committee, organized journal clubs and talk series, and acted as a postdoc representative at STScI.
- Events Coordinator for Oxford Women in Physics Society (2015) and a key member of LOCs, including HARMONI and Wetton Workshop at Oxford.
- Supervised an undergraduate intern at Maria Mitchell Observatory (2019–2021), leading to a published paper. Mentored three interns in the UCSC Summer Internship Program (2016). Tutored six master's students at the University of Oxford (2015–2016).

Data Science in Astronomy

- 10 years of astrophysics research, leveraged data science & ML techniques to tackle open-ended complex problems.
- 8 years of pipeline building to maximize data quality for research purposes, developed novel enhancement methods.
- Led calibration and data processing for *Hubble Space Telescope's* (HST) Space Telescope Imaging Spectrograph (STIS) and Wide Field Camera 3 (WFC3). Developed machine learning methods to track sensitivity trends, redesigned the WFC3 darks pipeline, and improved image quality.
- Designed and implemented data processing pipelines for the K-band Multi-Object Spectrograph (KMOS) integral field unit (IFU) and multiple HST programs, applying statistical analysis, machine learning, and image correction techniques.

ASTROPHYSICS PUBLICATIONS ([Google Scholar link](#))

Four 1st author peer-reviewed papers, 2 1st author technical reports, 27 co-authored peer-reviewed papers, inc. 1 student paper & 18 with data science contributions, 529 citations (ORCID ID: 0000-0002-0604-654X).

- '*Lyman Continuum Galaxy Candidates in COSMOS*', 1/2022, ApJ, 924, 14
- '*Unravelling the Origin of the Counter-Rotating Core in IC 1459 with KMOS and MUSE*', 9/19, MNRAS, 488-2, 1679-1694
- '*The KMOS Cluster Survey (KCS) III: fundamental plane of cluster galaxies at $z \sim 1.80$ in JKCS 041*', 12/2017, ApJ, 850, 203
- '*Emission-line stars in M31 from the SPLASH and PHAT surveys*', 3/2017, MNRAS, 465, 4180-4203

2 First Author Technical Reports: '*Comparison of STIS CCD CTI Corrections on Photometry*', STIS Instrument Report, 5/2022 • '*STIS CCD and MAMA Full-field Sensitivity and its Time Dependence*', STIS Instrument Report, 4/2022

Co-Author Peer-reviewed Publications: 26 papers, inc. 1 student paper & 17 with data science contributions

PROPOSALS + GRANTS

Principal Investigator (PI)

- NASA/Keck: 3 telescope nights (IDs: 2020B-N168, 2021B-N87), \$15,650 & \$12,650 PI Data Awards, June 2020 & 2021
- Large Binocular Telescope: 1.5 telescope nights (ID: 2019B-0448), June 2019
- European Southern Observatory: 3 telescope nights (ID: 0100.A-0296(A)), July 2017
- Travel grants: Royal Astronomical Society (August 2015 & January 2018), Christ Church, Oxford (August 2015 & April 2016), International Astronomical Union (August 2015)

Co-Investigator (Co-I)

- NASA/Keck: 1.5 telescope nights (ID: 2019B-N010), May 2019
- HST: Archival Research (ID: 16621, Cycle 29), Jun 2021, 8 orbits (ID: 15968), Jul 2019, 90 orbits (ID: 15637), Nov 2018