# TAMARA FLETCHER

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## RESEARCH EXPERIENCE

2023–	Ramsay Fellowship – University of Adelaide High-latitude climate sensitivity inferred from the geological past
2021–2023	Marie Skłodowska-Curie Action, Individual Fellowship – University of Leeds PReP – Palaeocloud Reconstruction Project
2019–2021	President's International Fellow, Chinese Academy of Sciences – Institute of Applied Implications of Arctic palaeoclimate and palaeofire records for Earth System Models.
2017–2018	Post-Doctoral Fellow, University of Nevada, Reno-University of Montana, Missoula Fire and vegetation as long-term feedbacks to Arctic amplification
2015–2018	Post-Doctoral Researcher, University of Montana, Missoula Investigation of Arctic amplification of temperature during the Pliocene
2009–2014	Ph.D. Research, University of Queensland, Brisbane Reconstructing the palaeoenvironment of the Upper Cretaceous Winton Formation in central-western Queensland
2006–2007	Honours Research, University of Queensland, Brisbane Description and biogeographic implications of pterosaur fossils from western Queensland
2005–2006	Undergraduate research Histology of leatherback turtle and crocodilian osteoderms

### **AWARDS AND GRANTS**

2023	Ramsay Fellowship (~\$570,000 AUD)
	PAGES Data Stewardship Scholarship (\$15,000 USD)
2022	Alan Turing Institute – Postdoctoral Enrichment Award (PI £2000 GBP)
	PAGES and EGU Early Career Scientist Galileo Conference support (£550)
2021	Marie Skłodowska-Curie Action, Individual Fellowship (PI €224,933.76 EU)
2020	European Research Council Seal of Excellence
2019	President's International Fellowship Initiative – CAS (PI 520,000 RMB)
	European Research Council Seal of Excellence
2017	Endeavour Research Fellowship (PI \$23,000 AUD)
2016	National Geographic Committee for Research and Exploration (PI \$25,000 USD)
2016	Polar Continental Shelf Program Field Support (Field Team, ~\$57,000, CAD)
2014	University of Queensland – 2014 Future Leader Award
2013	University of Queensland, School of Biological Sciences 3-minute Thesis competition
	University of Queensland, Faculty of Science 3-minute Thesis competition runner-up
2009-2014	Australian Postgraduate Award Scholarship (PI ~\$87,000 AUD Stipend + fee waiver)
2012	UQ, Graduate School International Travel Award (\$5000 AUD)
	UQ, School of Biological Sciences International Conference Travel Grant (\$1,200 AUD)
	UQ, School of Biological Sciences Conference Travel Grant (\$400 AUD)
2011	UQ School of Geography Field Support (\$1,400 AUD)
2008	Smart Women, Smart State Undergraduate Awards – Short-listed
	Commonwealth Supported Postgraduate Coursework Scholarship (~\$2,400 AUD)
	Dean's Commendation for High Achievement Faculty of Social & Behavioural Sciences
2003-2006	Dean's Commendation for High Achievement Faculty of Biological & Chemical Sciences

### 2009 – 2014 PhD Palaeontology

The palaeoenvironment of the Upper Cretaceous (Cenomanian-Turonian) portion of the Winton Formation, central-western Queensland, Australia, The University of Queensland

### 2008 – 2009 Graduate Certificate of Arts

Philosophy, specifically focusing on the logic and philosophy of science, The University of Oueensland

#### 2008 – 2009 Graduate Certificate of Communication

Science communication, The University of Oueensland

#### 2006 – 2007 BSc Honours – First Class

New pterosaur fossils from the Early Cretaceous (Aptian–Albian) of Western Queensland, Australia, The University of Queensland

### 2003 – 2006 Bachelor of Science

Zoology, with four final year research subjects in Palaeontology, The University of Queensland

### **PUBLICATIONS**

- Haywood, A.M., Tindall, J.C., Burton, L.E., Chandler, M.A., Dolan, A.M., Dowsett, H.J., Feng, R., **Fletcher, T.L.,** Foley, K.M., Hill, D.J., Hunter, S.J., Otto-Bliesner, B.L., Lunt, D.J., Robinson, M.M., Salzmann, U., 2023. Pliocene model intercomparison project Phase 3 (PlioMIP3) Science plan and experimental design. Global and Planetary Change, 104316.
- Su J, Liu Z, Wang W, Jiao K, Yu Y, Li K, Lü Q, **Fletcher TL**. 2023. Evaluation of the Spatial Distribution of Predictors of Fire Regimes in China from 2003 to 2016. *Remote Sensing* 15(20): 4946. https://doi.org/10.3390/rs15204946
- Tindall, J., Haywood, A., Salzmann, U., Dolan, A., **Fletcher, T.** 2022. The Warm Winter Paradox in the Pliocene Northern High Latitudes. *Climate of the Past* 18: 1385–1405. https://doi.org/10.5194/cp-18-1385-2022
- **Fletcher, T.,** Eble, C., Sinninghe Damsté, J.S., Brown, K.J., Rybcyznski, N., Gosse, J., Liu, Z., Ballantyne, A. 2021. Widespread wildfire across the Pliocene Canadian Arctic Archipelago. *Palaeogeography*, *Palaeoclimatology*, *Palaeoecology* 584: 110653. https://doi.org/10.1016/j.palaeo.2021.110653
- **Fletcher, T.L.,** Telka, A., Rybczynski, N., Matthews, J., Jr. 2021. Neogene and early Pleistocene flora from Alaska and Arctic/Subarctic Canada: new data, intercontinental comparisons and correlations. *Palaeontologica Electronica* 24(1): a07. https://doi.org/10.26879/1121
- Barendregt, R.W., Matthews J.V. Jr., Behan-Pelletier, V., Brigham-Grette, J., Fyles, J.G., Ovenden, L.E., McNeil, D.H., Brouwers, E., Marincovich, L., **Fletcher, T.** 2021. Biostratigraphy, age, and the paleoenvironment of the Pliocene Beaufort Formation on Meighen Island, Canadian Arctic Archipelago. *Geological Society of America Special Publications* 551: 1–39. https://doi.org/10.1130/SPE551.
- Jiao, K., Liu, Z., Wu, S., **Fletcher, T.** 2021. Revealing climatic impacts on the temporal and spatial variation in vegetation activity across China: Sensitivity and contribution. *Advances in Climate Change Research* 12(3): 409–420. https://doi.org/10.1016/j.accre.2021.04.006
- **Fletcher, T.,** Lepley, K., Rouini, N., Bloye, R., Tremarelli, C., Peña, K., Meko, D., Touchan, R. 2019. Two reconstructions of August–July precipitation for central northern Arizona from tree-rings, *Tree-Ring Research* 75: 116–126. https://doi.org/10.3959/1536-1098-75.2.116
- **Fletcher, T.**, Warden, L., Sinninghe-Damste, J., Brown, K.J., Rybczynski, N., Gosse, J., Ballantyne, A.P. 2019. Evidence for fire in the Pliocene Arctic in response to amplified temperature. *Climate of the Past* 15: 1063–1081. https://doi.org/10.5194/cp-2018-60.
- **Fletcher, T.,** Csank, A., Ballantyne, A.P. 2019. Identifying bias in cold season temperature reconstructions by beetle mutual climatic range methods in the Pliocene Canadian High Arctic, *Palaeogeography, Palaeoclimatology, Palaeoecology* 514: 672-676. https://doi.org/10.1016/j.palaeo.2018.11.025

- Feng, R., Otto-Bliesner, B, Yangyang, X., Brady, E., **Fletcher, T.,** Ballantyne, A. 2019. Contributions of aerosol-cloud interactions to mid-Piacenzian seasonally sea ice-free Arctic Ocean, *Geophysical Research Letters* 46: 9920–9929. https://doi.org/10.1029/2019GL083960
- **Fletcher, T.,** Moss, P., Salisbury, S.W. 2018. Palaeoenvironmental Reconstruction of the Upper Cretaceous (Cenomanian-Turonian) portion of the Winton Formation, central-western Queensland, Australia, *PeerJ* 6: e5513. https://doi.org/10.7717/peerj.5513
- **Fletcher, T.**, Feng, R., Telka, A.M., Matthews, J.V., Jr., Ballantyne A.P. 2017. Floral dissimilarity and the influence of climate in the Pliocene High Arctic: Biotic and abiotic influences on five sites on the Canadian Arctic Archipelago, *Frontiers in Ecology and Evolution: Paleoecology* 5: 19. https://doi.org/10.3389/fevo.2017.00019
- Gosse, J.C., Ballantyne, A.P., Barker, J.D., Csank, A.Z., **Fletcher, T.L.**, Grant, G.W., Greenwood, D.R., MacPhee, R.D., Rybczynski, N. 2017. PoLAR-FIT: Pliocene Landscapes and Arctic Remains—Frozen in Time. *Geoscience Canada* 44: 47–54. https://doi.org/10.12789/geocanj.2017.44.116
- Feng, R., Otto-Bliesner, B., **Fletcher, T.,** Tabor, C., Ballantyne, A., Brady, E. 2017. Amplified Late Pliocene terrestrial warmth in northern high latitudes from greater radiative forcing and closed Arctic Ocean gateways, *Earth and Planetary Science Letters* 466: 129–138. https://doi.org/10.1016/j.epsl.2017.03.006
- **Fletcher, T.L.**, Moss, P.T., Salisbury, S.W. 2015. Wood growth indices as climate indicators from the Upper Cretaceous (Cenomanian–Turonian) portion of the Winton Formation, Australia. *Palaeogeography Palaeoclimatology Palaeoecology* 417: 35–43. https://doi.org/10.1016/j.palaeo.2014.10.012
- **Fletcher, T.L.**, Greenwood, D.R., Moss, P.T., Salisbury, S.W. 2014. Palaeoclimate of the Late Cretaceous (Cenomanian–Turonian) portion of the Winton Formation, central-western Queensland, Australia: new observations based on CLAMP and Bioclimatic Analysis. *Palaios* 29: 121–128. https://doi.org/10.2110/palo.2013.080
- **Fletcher, T.L.**, Cantrill, D.J., Moss, P.T., Salisbury, S.W. 2014. A new species of *Protophyllocladoxylon* from the Upper Cretaceous (Cenomanian-Turonian) portion of the Winton Formation, central-western Queensland, Australia. *Review of Palaeobotany and Palynology* 208: 43–49. https://doi.org/10.1016/j.revpalbo.2014.05.004
- **Fletcher, T.L.**, Salisbury, S.W. 2014. Probable oribatid mite (Acari: Oribatida) tunnels and faecal pellets in silicified conifer wood from the Late Cretaceous (Cenomanian–Turonian) portion of the Winton Formation, central-western Queensland, Australia. *Alcheringa* 38: 541–545. https://doi.org/10.1080/03115518.2014.912557
- **Fletcher, T.L.**, Moss, P.T., Salisbury, S.W. 2013. Foliar physiognomic climate estimates for the Late Cretaceous (Cenomanian–Turonian) Lark Quarry fossil flora, central-western Queensland, Australia. *Australian Journal of Botany* 61: 575–582. https://doi.org/10.1071/BT13197
- Delfino, M., Scheyer, T.M., Chesi, F., **Fletcher, T.L.**, Gemel, R., Macdonald, S., Rabi, M., Salisbury, S.W. 2013. Gross morphology and microstructure of type locality ossicles of *Psephophorus polygonus* Meyer, 1847 (Testudines, Dermochelyidae). *Geological Magazine* 150: 767–782.
- **Fletcher, T.**, Salisbury, S.W. 2010. New pterosaur fossils from the Early Cretaceous (Albian) of Queensland, Australia. *Journal of Vertebrate Paleontology* 30(6): 1747–1759. https://doi.org/10.1080/02724634.2010.521929

### **CONFERENCE PRESENTATIONS**

- **Fletcher, T.,** Tindall, J., Voss, J., Haywood, A., 2023. Cloudy with a chance it rained: Progress towards a proxy for palaeocloud. European Geophysical Union General Assembly, 24<sup>th</sup>–28<sup>th</sup> April. https://doi.org/10.5194/egusphere-egu23-13521
- **Fletcher, T.,** Tindall, J., Feng, R., Haywood, A., Salzmann, U., Dolan, A. 2022. The Pliocene Arctic: Were winters warm? *NECLIME Annual Conference*, 21<sup>st</sup>–24<sup>th</sup> November.
- **Fletcher, T.**, Tindall, J., Haywood, A. 2022. Palaeocloud for the Pliocene. *The warm Pliocene: Bridging the geological data and modelling communities workshop*, 24<sup>th</sup>–26<sup>th</sup> August.

- Haywood, A., Burton, L., Dolan, A., Dowsett, H., **Fletcher, T.**, Hill, D., Hunter, S., and Tindall, J. 2022. PlioMIP3: A science programme proposal to the community. *The warm Pliocene: Bridging the geological data and modelling communities workshop*, 24<sup>th</sup>–26<sup>th</sup> August.
- **Fletcher, T.** 2022. A Beaver Pond frozen in time: Multi-proxy analysis in the Pliocene High Arctic. *NECLIME workshop on climate*. 21<sup>st</sup>–22<sup>nd</sup> February.
- **Fletcher, T.,** Csank, A., Gosse, J., Rybczynski, N., Brown, K., Eble, C., Ballantyne, A. 2020. Fire under ice: Evidence for extensive geographic and temporal range of wildfire in the Pliocene High Arctic. *Geological Society of America Connects Online*, 26<sup>th</sup>–30<sup>th</sup> October.
- Csank, A.Z., **Fletcher, T.**, Gosse, J.C., 2020. Past futures: Reconstructing the fire history of the Pliocene Arctic, *1st Tree Ring Society Virtual Symposium*, 29<sup>th</sup> May.
- **Fletcher, T.,** Rybczynski, N., Telka, A., Matthews, J.V., Jr. 2020. Neogene plant macrofossils from Alaska and Arctic/Subarctic Canada: New data, intercontinental comparisons and correlations, *2nd Palaeontological Virtual Congress*, 1<sup>st</sup>–15<sup>th</sup> May.
- **Fletcher, T.,** Barendregt, R.W., Matthews, J.V., Jr., Behan-Pelletier, V., Brigham-Grette, J. Fyles, J.G., Ovenden, L.E., McNeil, D., Brouwers, E., Marincovich L. 2020. Biostratigraphy, age, and the paleoenvironment of the Pliocene Beaufort Formation on Meighen Island, Canadian Arctic Archipelago, *2nd Palaeontological Virtual Congress*, 1<sup>st</sup>–15<sup>th</sup> May.
- Csank, A.Z., **Fletcher, T**., Gosse, J.C., 2019. It Was Always Burning, Fire Scars from subfossil wood reveal fire return intervals in a mid-Pliocene Arctic forest, *52<sup>nd</sup> Fall Meeting of the American Geophysical Union*, San Francisco, USA, 9<sup>th</sup>–13<sup>th</sup> December.
- **Fletcher, T.,** Feng, R., Brown, K., Warden, L., Csank, A., Higuera, P., Rybczynski, N., Otto-Bliesner, B., Ballantyne, A. 2017. Vegetation and fire: Feedbacks to Pliocene Arctic climate, *Geological Society of America Abstracts with Programs* 49(6) https://doi.org/10.1130/abs/2017AM-298574. Seattle, USA, 22<sup>nd</sup>-25<sup>th</sup> October.
- Feng, R., Otto-Bliesner, B., **Fletcher, T.,** Ballantyne, A., Brady, E. 2017. Contributions to Pliocene Arctic warmth from a clean atmosphere and enhanced forest fire emissions, *PAST Global Changes 3<sup>rd</sup> Young Scientist Meeting*, Morillo de Tou, Spain, 7–9<sup>th</sup> May.
- **Fletcher**, **T.** 2017. Outside of now: Informing Arctic climate predictions with fossil floras. 3<sup>rd</sup> Association of Polar Early Career Scientists International Online Conference, 20<sup>th</sup> March.
- **Fletcher, T.,** Brown, K., Warden, L., Csank, A., Feng, R., Higuera, P., Rybczynski, N., Ballantyne, A. 2016. Climate-vegetation-fire Interactions: Pieces in the Pliocene polar puzzle, *Abstract #PP53C-2390, 49<sup>th</sup> Fall Meeting of the American Geophysical Union*, San Francisco, USA, 12–16<sup>th</sup> December.
- Feng, R., Otto-Bliesner, B., **Fletcher, T.,** Ballantyne, A., Brady, E. 2016 Contributions to Pliocene Arctic warmth from removal of anthropogenic aerosol and enhanced forest fire emissions. *49<sup>th</sup> Fall Meeting of the American Geophysical Union*, San Francisco, USA, 12–16<sup>th</sup> December.
- **Fletcher, T.** 2012. Paleoclimate of the dinosaur-bearing, mid-Cretaceous Winton Formation, central-western Queensland, Australia: New observations based on Leaf Margin Analysis, Climate Leaf Analysis Multivariate Program, Bioclimatic Analysis and fossil wood growth indices. *72nd Annual Meeting of the Society of Vertebrate Paleontology*, Raleigh, USA, 32, 94–95.
- **Fletcher, T.**, Moss, P., Salisbury, S. 2012: Palaeoclimate of the mid-Cretaceous Winton Formation, central-western Queensland, Australia: New observations based on Leaf Margin Analysis, CLAMP, Bioclimatic Analysis and fossil wood growth indices. *34th International Geological Congress*, Brisbane, Australia, 5<sup>th</sup>–10<sup>th</sup> August.
- Delfino, M., Scheyer, T., Chesi, F., **Fletcher, T**., Gemel, R., MacDonald, S., Rabi, M. and Salisbury, S., 2012. Ossicle gross morphology and microstructure of *Psephophorus polygonus* Meyer, 1847 (Testudines, Dermochelyidae), p. 18 In: *Program and Abstracts Symposium on Turtle Evolution* 48 pp, June 1<sup>st</sup>–4<sup>th</sup>, University of Tübingen, Germany.
- **Fletcher, T.**, Berrell, R.W., Geddes, K., Salisbury, S.W., 2009. Acid preparation of vertebrate fossils (Teleosti and Dinosauria) from the mid-Cretaceous Winton Formation of Isisford, central-western Queensland, Australia. In: Travuillon, K.J., Worthy, T.H., Hand, S.J. and Creaser, P. (ed), *Conference on*

### **T Fletcher**

*Australian Vertebrate Evolution, Palaeontology and Systematics*, 2009. *Geological Society of Australia, Abstracts*, 93, p.74, June 22<sup>nd</sup>–25<sup>th</sup>, Sydney, Australia.

**Fletcher, T.,** Salisbury, S.W., Cook, A.G., 2007. New pterosaur fossils from the Early Cretaceous (Aptian-Albian) of western Queensland, Australia. *Flugsaurier: Pterosaur conference in honour of Peter Wellnhofer*, September 10<sup>th</sup>–14<sup>th</sup>, Munich, Germany

**Fletcher, T.L.,** Salisbury, S.W., Cook, A.G. 2007. New pterosaur fossils from the Early Cretaceous (Aptian-Albian) of western Queensland, Australia. In: Warren, A. (ed), *Conference on Australian Vertebrate Evolution, Palaeontology and Systematics*, 2007. *Geological Society of Australia*, Abstracts, 85, p. 26, 10<sup>th</sup>–13<sup>th</sup> April Melbourne, Australia.

### **COMMUNITY ENGAGEMENT**

2022	Otley Science Week Cafe, 'Cloudy, with a chance it rained'
2020	Your Forest Podcast, 'The Evolution of the Boreal Forest'
2017	Science News article, 'What the Pliocene epoch can teach us about future warming on Earth'
2015	ABC Radio Adelaide, 9 June
	ABC Radio Gold Coast, 8 June
	The Conversation article, 'Before we build Jurassic World we need to study recent
	extinctions' 8 June
2014	Longreach Leader article, 'Longreach mayor happy to go down in history as petrified wood'
	4 July
	ABC regional radio, 1 July
	Dinosaur Chat by APN News and Media on 'Coveritlive.com' 3 June
	ABC Science article, 'Leaves reveal ancient Queensland was warm' 7 April
	Speed-date a Scientist; National Youth Science Forum and
	University of Queensland Faculty of Science Youth Science Forum
2010, 2013	Three-minute thesis competition

### PROFESSIONAL ENGAGEMENT

**Working Groups:** PlioMIP (Pliocene Model Intercomparison Project) Steering Committee –

Terrestrial Data Lead

PlioMioVAR Steering Committee – Neogene Terrestrial Climate Lead PoLAR-FIT (Pliocene Landscapes and Arctic Remains – Frozen In Time)

2016–2017 Committee for the Association of Polar Early Career Scientists

Nordic Research Council Report lead

**Editorial Board:** Frontiers in Earth Science - Palaeontology

**Journal Referee:** Palaeogeography Palaeoclimatology Palaeoecology

Geological Magazine Cretaceous Research

Canadian Journal of Earth Sciences

Earth & Environmental Science Transactions of the Royal Society of Edinburgh

MethodsX

Review of Palaeobotany and Palynology

**PALAIOS** 

**Proposal Referee:** National Science Foundation - Division of Earth Sciences, USA

The Royal Society – University Research Fellowships, UK

Scientific Societies: International Organisation of Palaeobotany

**NECLIME** 

Geological Society of America

Association of Polar Early Career Scientists

# INVITED PRESENTATIONS

2022	School of Geography, seminar series
	Centre for Plant Sciences Symposium
	Palaeo@Leeds, seminar series
2019	Institute of Applied Ecology – Chinese Academy of Sciences, seminar series
2018	Geography colloquium – University of Nevada
2017	PaleoEcology and Fire Ecology Lab – University of Montana
	Paleoecology Lab – Montana State University
2015	Geosciences Colloquium – University of Montana
2014	Rockhampton Girls Grammar senior archaeology classes, guest speaker
2013	Guest lecture for University of Queensland course, 'BIOL2201 – Evolution'
2009 - 2010	Brisbane state primary school visits, prep to grade 2

# PROFESSIONAL DEVELOPMENT

2023	Teaching Techniques: Writing Effective Learning Objectives – LinkedIn Learning
	Foundations In Teaching – OD&PL, University of Leeds
2022	Data Science in R – Data Camp
	Alan Turing Institute conference on AI, 22–23 February
	GeoChronR Hackathon, 8–9 February
	Building Impact Momentum seminars with OD&PL Leeds
2021	National Geographic Explorer's Festival, Communication, Tools and Technology
	Workshops
	Learning GIT and GitHub
	Discovering your Leadership with OD&PL Leeds
	Introduction to Linux & High-Performance Computing Carpentry, ARC Leeds
	Effective Postgraduate Research Supervision, OD&PL Leeds
	Introduction to Python
2017	Dendroclimatology Intensive Workshop, Laboratory of Tree Ring Research, University of
	Arizona, 15 May – 3 June
• • • •	Dendrology and Wood Anatomy, University of Montana NFC.
2016	Climate Science and Modeling, University of Chicago via CourseRA.
	Wilderness First Aid Certificate with Aerie Backcountry Medicine.
2015	Framing: Creating Powerful Political Messages, DelfX via edX
2014	Senior First Aid and CPR
2012	4WD Training - Sand
2012	Computing for Data Analysis with John Hopkins University via CourseRA
2004 – 2012	Research assistant in the Vertebrate Palaeontology and Biomechanics laboratory
2011	Introducing R workshop with Simon Blomberg, UQ
2010 – 2011	Tutor development modules taught by the School of Biology, UQ
2008	4WD Training – 'Bush'
2005	Peer Assisted Study Sessions Leadership Training

# TEACHING EXPERIENCE

2022	Supervision – Natural Environment Research Council Research Placement
2014	Lecturing – Evolution, 'Mass Extinctions' and 'The Origin of Tetrapods'
	Field Tutoring – Australia's Terrestrial Environment
2013 - 2014	Senior tutor – Evolution
2013	Demonstrator – Global challenges in the Environment
2010 - 2012	Tutor – Evolution
2008 - 2012	Supervision – Undergraduate laboratory experience
2009	Tutor – Critical Reasoning
2004 - 2006	Peer Assisted Study Sessions – Animal Biology

### FIELD EXPERIENCE

2017 Northern Arizona, USA

Sunset Crater; dendroclimatology field collections.

2016 Canadian Arctic Archipelago

Beaver Pond, Fyles Leaf Beds, Lake Ekblaw; plant macrofossils and sediments.

Montana, USA

Lolo National Forest; dendrology field collections.

2011 Queensland, Australia

Bunya Mountains, Central coast, Wet Tropics World Heritage Site, Brisbane;

dendroclimatology field collections.

2010 Central Queensland, Australia

Lark Quarry; leaf impressions and sediment.

2008, 2009 Central Queensland, Australia

Isisford; dinosaur bone bed.

2007 Central Queensland, Australia

Bladensburg; sauropod bone bed.

### **DIGITAL IDENTIFIERS**

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#### REFEREE

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