

AOMS 2026 – Preliminary Conference Programme

Day 1 (30 June 2026)

TIME	PRESENTATION
15:00 - 15:45	<i>Ocular morphology does not account for the quantitative gaze-following differences between humans and rhesus monkeys</i> - Masih Shafiei
15:45 - 16:30	<i>Interdisciplinary venues in eye appearance research - current opportunities and future directions</i> - Juan Olvido Perea García
16:30 - 17:00	Coffee break
17:00 - 17:15	<i>Introducing FaceDIG and FaceDIG PROFILE: Applications in Ocular Morphology and Beyond</i> - Karel Kleisner
17:15 - 17:45	<i>Eye morphology-dependent sympathetic arousal during an eye-contact task</i> - Marcin Hajnowski
17:45 - 18:00	Summary, closing remarks
18:00	Barbecue

Day 2 (1 July 2026)

TIME	PRESENTATION
10:30 - 10:45	<i>Analysis of the developmental trajectories of human facial morphology based on data from the Wrocław Longitudinal Twin Study</i> - Karolina Gruza
10:45 - 11:00	<i>Investigating Sexual Dimorphism in Ocular Morphology Using Longitudinal Data</i> - Dariusz Danel
11:00 - 11:30	<i>The influence of facial dimensions on voice parameters in humans</i> - Łukasz Pawelec
11:30 - 12:00	Coffee break
12:00 - 12:30	<i>Eyes in the Field: Gaze as a Regulator of Multimodal Value Exchange in Human Social Interaction</i> - Jonas Nölle
12:30 - 13:00	<i>Is Light Quality the Key to Better Photography?</i> - Zdzisław Lewandowski
13:00 - 13:15	<i>Relationship between dietary calcium intake and knowledge of calcium among Mongolian adults</i> - Myadagmaa Jaalkhorol
13:15 - 14:15	Lunch break
14:15 - 15:00	<i>Understanding Aging Processes in the Human Eye through Optical Imaging</i> - Ireneusz Grulkowski
15:00 - 15:30	<i>Retinal eye tracking for neural response assessment: pioneering strategies and applications</i> - Marta Skrok

Day 3 (2 July 2026)

TIME	PRESENTATION
10:00 - 10:45	<i>Influence of scleral exposure on prosocial and antisocial perception. Updated findings from experimental and predictive approaches.</i> - Mathias Boyer Brosseau
10:45 - 11:15	<i>Effects of ocular morphology on human social perception: annual updates</i> - Vojtěch Fiala
11:15 - 11:45	<i>Eye gaze behavior during head nods and head shakes in interaction</i> - Aleksandra Ćwiek
11:45 - 12:15	Closing remarks and coffee break
13:00 - 16:00	<i>Modelling Behaviour with Mixed Effects</i> - workshop by Jack E.Taylor • organized by IAS • venue: ICNT https://icnt.umk.pl/, Room B.1.9 • group limit is around 20 participants • main objectives: The workshop will be an introduction to the logic and maths behind linear mixed-effects models, working with interactive simulations and toy examples in R. By the end of the workshop, people should have a working knowledge of linear mixed-effects models and should know how to fit and interpret them. If there is time, we will also cover other families of models that extend the idea. People who will gain the most from this workshop will already have a basic knowledge of working with data and code in R. The materials will be shared on GitHub after the event. The workshop will be in English.

ABSTRACTS

Masih Shafiei

Ocular morphology does not account for the quantitative gaze-following differences between humans and rhesus monkeys

Previous research suggests that humans are sensitive to object-directed eye gaze, which efficiently guides their attention toward objects of shared interest. In contrast, non-human primates typically require more salient gaze cues to produce comparable attentional orienting. However, it remains unclear whether cross-species differences in ocular morphology account for this performance gap. To address this question, we examined covert shifts of spatial attention in humans and rhesus monkeys in response to eye-gaze cues presented by realistic rhesus monkey head avatars. Target detection was reliably enhanced on gaze-congruent compared to gaze-incongruent trials in humans, consistent with a robust gaze-cueing effect. In monkeys, however, such an effect emerged only when gaze cues were made more salient by increasing gaze deviation amplitude while presenting the cue from closer proximity, simulating a close distance social interaction. We next tested whether species-specific ocular morphology could explain these differences. Given that human eyes are more visually conspicuous than those of rhesus monkeys, we hypothesized that humans would show a stronger gaze cueing effect when viewing human eyes compared to monkey eyes. To test this, the same human participants were presented with human head avatars displaying eye gaze cues matched to the monkey stimuli in gaze deviation, motion dynamics, and eye size. Contrary to our prediction, humans exhibited gaze-cueing effects of comparable magnitude for both human and monkey eye-gaze stimuli. These results indicate that species-specific ocular morphology alone cannot explain cross-species differences in gaze-following performance. Instead, the findings suggest that differences in perceptual sensitivity to gaze cues may play a more critical role.

Vojtěch Fiala

Effects of ocular morphology on human social perception: annual updates

Over the past two years, we have examined the associations between human facial morphology (with a particular focus on eye colour and brightness) and social perception, specifically attractiveness and its correlates, including perceived sex-typicality. We also investigated the relationship between named iris colour and social perception. Interestingly, we identified several associations that contradict predictions from evolutionary psychology. Specifically, while a brighter sclera is expected to be preferred – particularly in female faces, as a marker of youth and health – our findings revealed the opposite effect. To address whether this indicates a methodological flaw, we have critically reviewed our approach, though no errors have been identified. During this talk, I will present the continuation of this research, focusing on recent methodological advancements. In a similar vein, we collected rating data to cross-culturally associate measured iris colour, perceived iris colour, and first impressions of the whole face. Our initial question, whether people agree on ascribed iris colour across-cultures has evolved; we now explore what limits this agreement. We explore why the strong cross-cultural consensus found in both iris colour naming and the social effects of scleral colour does not extend to the effects of iris colour (both rated and measured) on whole-face first impressions. These data are currently being synthesised into a manuscript, which I will present as a coherent framework. Other components of our investigation, whilst yielding interesting results, remain preliminary and will be discussed only briefly.

Karel Kleisner

Introducing FaceDIG and FaceDIG PROFILE: Applications in Ocular Morphology and Beyond

We introduce FaceDIG and FaceDIG PROFILE (facedig.org), an AI-powered tool for automated landmark placement on frontal and profile facial portraits for geometric morphometrics. FaceDIG places anatomically recognized landmarks and semilandmarks on 2D en-face photographs with human-level precision, while FaceDIG PROFILE extends this capability to profile portraits - a rarely addressed application. We highlight its potential for integrating ocular morphology with facial shape research. FaceDIG is open-source, integrates with R and Python, and was trained on ~5,000 faces from 20 distinct cultures across Africa, Asia, Europe, and the Americas.

Zdzisław Lewandowski

Is Light Quality the Key to Better Photography?

This presentation addresses the conceptual distinction between color as a physical stimulus and colour as a subjective perceptual experience. A brief overview of the physiology of vision is provided to contextualize the biological mechanisms underlying colour perception. The fundamental mechanisms of color formation are discussed, with particular emphasis on the additive and subtractive color models. Furthermore, the concept of white balance is examined as a process of chromatic compensation. The visible spectrum of light is outlined, along with a comparative evaluation of various light sources—namely sunlight, incandescent lamps, light-emitting diodes (LED), fluorescent lamps, and flash illumination—highlighting their respective advantages and limitations. Finally, the Color Rendering Index (CRI) is introduced as a key parameter for assessing light quality, including a discussion of its strengths and inherent limitations.

Jonas Nölle

Eyes in the Field: Gaze as a Regulator of Multimodal Value Exchange in Human Social Interaction

Human eyes are unusually expressive—morphologically distinctive, behaviorally precise, and socially indispensable. Yet accounts of gaze in social interaction tend to treat it in isolation from the other channels - voice, gesture, posture, proxemics - with which it necessarily co-operates. We present the Multimodal Social Interaction Field (MSIF), a unified framework in which gaze functions as a primary regulator of a dynamic social field, coordinating with the full multimodal ensemble to manage value, affect, and social obligation in real-time interaction. Building on the physics-inspired Social Interaction Field Model (Zhou et al. 2019, Nature Human Behaviour), axiology of spoken interaction, and empirical findings on expansion/contraction dynamics in social signaling, the MSIF captures how gaze direction, dilation, and brow configuration participate in PUSH (approach, claim-making) and PULL (avoidance, mitigation) operations that govern turn-by-turn social exchange. We argue that the evolution of human ocular morphology - the exposed sclera, the mobile brow - is best understood not just as enabling gaze-following or joint attention, but as part of a broader multimodal system for fine-grained value signaling, with implications for the origins of politeness, preference structure, and indirect speech in human language.

Juan Olvido Perea García

Interdisciplinary venues in eye appearance research - current opportunities and future directions

Research on eye appearance has received unprecedented attention in recent years, driven largely by debates around the Cooperative Eye Hypothesis and the proposed communicative function of the human eye. However, as the claims of the CEH become increasingly difficult to support, the field is now in a productive position to broaden its questions, methods, and applications. In this talk, I outline several promising directions for future research on eye appearance across disciplines. First, I discuss how variation in scleral, iris, and periocular traits can inform research on visual perception, including eye contact, gaze following, attentional salience, and the role of viewing context. Second, I examine applied domains in which eye appearance is deliberately manipulated, from mascots and character design to virtual agents, robots, avatars, and other human representations. Finally, I highlight emerging health-related questions, including the possible roles of iris and scleral pigmentation in seasonal affective vulnerability and ocular photoprotection, including protection against UV-related damage. By moving beyond single-origin evolutionary narratives, eye appearance research is at the crossroads to become an inherently interdisciplinary field connecting comparative biology, psychology, optics, health, design, and human-computer interaction.

The human eye undergoes continuous structural, optical, and biomechanical changes throughout life. Although many of these alterations are part of normal physiological aging, they also contribute to the onset and progression of ocular diseases, including cataract and disorders of the vitreoretinal interface. Understanding how individual ocular tissues change with age is therefore essential for distinguishing normal aging from early pathology and for developing strategies for timely diagnosis and personalized treatment.

This talk will provide a comprehensive overview of aging processes affecting the eye, from the cornea to the retina, with particular emphasis on recent advances in non-invasive optical imaging. The presentation will discuss age-related changes in corneal morphology and biomechanics, progressive modifications of the crystalline lens associated with accommodation loss and cataract formation, degeneration of the vitreous body leading to posterior vitreous detachment. Recent developments in optical coherence tomography and quantitative image analysis have enabled these processes to be visualized and measured in vivo with micrometer-scale resolution, providing objective biomarkers of ocular aging. The presentation will also highlight how quantitative optical imaging is transforming our understanding of age-related ocular changes. These emerging technologies offer new opportunities for early disease detection, monitoring of disease progression, and patient management.