

# **The Origin of Life and Nature Before Sin:**

## **Scientific and Theological Perspectives**

**1-2 April 2022**

**Aula Minor**



ANGELICVM  
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# Schedule

Friday, April 1

- 09:00 Christopher Shingledecker – “*On the Origin of Life: A Scientific Perspective*”
- 10:00 Coffee Break
- 10:30 William Carroll – “*Causes and the Origin of Life: Philosophy of Nature, Metaphysics, and Theology*”
- 11:30 Coffee Break
- 12:00 Kieran McNulty – “*Apes, Hominins, and the Scientific Evidence for Human Origins*”
- 13:00 Lunch Break
- 14:30 Mariusz Tabaczek, O.P. – “*The Origin of the Human Species: Philosophical and Theological Perspectives*”
- 15:30 Coffee Break
- 16:00 Breakout Sessions I and II

## Saturday, April 2

- 09:00 Stanley Rosenberg – “*Can Nature be ‘Red in Tooth and Claw’ in the Thought of Augustine?*”
- 10:00 Coffee Break
- 10:30 Kent Dunnington – “*Fallen Angel Theodicies: A Philosophical Assessment*”
- 11:30 Coffee Break
- 12:00 Piotr Roszak – “*The Faith of Adam in Paradise. Imagining Original Justice with Aquinas*”
- 13:00 Lunch Break
- 14:30 Randall Rosenberg – “*On the Death of Adam and Eve*”
- 15:30 Coffee Break
- 16:00 Breakout Sessions III and IV

# Schedule with Abstracts

Friday, April 1

09:00 **Christopher Shingledecker**

*“On the Origin of Life: A Scientific Perspective”*

Developments in the field of biology in the early 20th century began to reveal that cells, and by extension the bodies of all organisms, are comprised of what are, essentially, molecules - undoubtedly complex ones, though molecules nonetheless. This realization led to a resurgence of the idea that abiogenesis - the origin of life - could occur spontaneously if the right combination of simpler molecular precursors were brought together in the right order and under the right conditions. Studies such as the well-known Miller-Urey experiment sought to achieve abiogenesis in the lab by recreating potential early-Earth conditions, and indeed there now exists a large body of scientific work on the topic. In this talk, a broad overview of this work up to the current state of the art will be given, covering topics such as the role of surface waters, hydrothermal vents, and even how molecules formed in the depths of interstellar space may have played a role. Moving beyond Earth, the possibility of life, both on another planetary body in our Solar System and beyond, will be discussed, as well as some of the means by which such hypothetical life could be detected.

10:00 Coffee Break

10:30 **William Carroll**

*“Causes and the Origin of Life: Philosophy of Nature, Metaphysics, and Theology”*

For many, there seems to be a strict disjunction: either we seek to explain the origin of life in terms of purely natural processes or we appeal to some kind of divine intervention that bridges the distinction between the non-living and the living. Must one accept the need to choose between natural and divine causality in explaining the origin of life? Are the causes that exist in the natural order sufficiently robust to explain the origin of living things? What is the relationship between divine causality and the causality of creatures in addressing this question? In particular, does the analysis of natural causes and creation set forth by Thomas Aquinas provide the basis for an adequate explanation of the *initial* emergence of life?

11:30 Coffee Break

12:00 **Kieran McNulty**

*“Apes, Hominins, and the Scientific Evidence for Human Origins”*

The subject of human origins has been a focus of curiosity and imagination since well before Darwin, and very likely since our ancestors first became sapient. This talk will review the current scientific evidence documenting the nature and timing of human origins: from the split with the last common ancestor of humans and chimpanzees to the earliest

members of our species, *Homo sapiens*. The rich fossil record of anatomical innovation in the hominin lineage is supported by archaeological evidence of cultural advancement, neontological and prehistoric genetic analyses, and comparative ethological studies of non-human primates. Altogether, this evidence for the evolutionary accretion of “human” characteristics provides a strong basis for exploring – from a variety of scientific, philosophical, and theological perspectives – a more fundamental question: what does it mean to be human?

13:00 Lunch Break

14:30 **Mariusz Tabaczek, O.P.**

*“The Origin of the Human Species: Philosophical and Theological Perspectives”*

The encounter of philosophical, theological, and biological views on anthropogenesis inspired the most emotional reactions to evolutionary theory and posed a considerable challenge to systematic and philosophical theology. The history of the conversation between scientific and religious worldviews on the topic of hominization is thus long and complicated. In my presentation I will discuss two issues. Firstly, I will delineate the contemporary Thomistic approach to the question of the origin of our species and defend it as theologically more accurate and precise than the most prevalent version of the semi-naturalistic position that is favored and repeated by many theologians and accepted in the official statements of the Magisterium of the Catholic

Church. Secondly, I will address the complex debate on mono- versus polygenism. I shall argue that the contemporary model favoring monogenetic origin of the human species (Muller 1951, Alexander 1964, and Kemp 2011) does not stand without including a direct (special) divine intervention.

15:30 Coffee Break

16:00 Breakout Sessions

## Saturday, April 2

09:00 **Stanley Rosenberg**

*“Can Nature be ‘Red in Tooth and Claw’ in the Thought of Augustine?”*

Can a Christian account of evil accept an understanding of nature as 'red in tooth and claw' from the outset? At the core of Augustine's theology, and the theological systems that shape the Augustinian tradition, is an approach to evil based on privation theory. Privation theory asserts a primal purity and a Fall subsequently corroding the originate state. On the face of it, such an approach would seem to be the cause of decay, cataclysm, animal predation, and pain in the natural world. This view wholly conflicts with later understandings of evolutionary development. In evolutionary science, such violence is endemic; hence, so-called 'natural evil' is an essential and ongoing operation within the physical and biological world. This lecture challenges the standard

presentation that Augustine argued for privation as the cause of physical and biological decay and so should be understood as contradictory to an evolutionary understanding. Alternatively, it presents the basis to understand Augustine's approach as treating natural cataclysm and violence as an originate facet and essential activity within the natural world and so integral to natural history, not as a consequence of a Fall. His later interpreters who claim him as an authority asserting that the natural world became alienated from God after the Fall, and only then began experiencing such physical and biological disturbances when violence and destruction were introduced into nature, have arguably misconstrued his position. This investigation is necessary to defining whether one doing theology in an Augustinian tradition can readily support biological evolution, must reject evolution if affirming Augustinian theology, or needs to alter the Augustinian approach to evil in order to affirm evolutionary interpretations. In analysing these issues, the lecture more broadly serves as a case study in working through issues of actual or apparent conflicts between theology and the sciences.

10:00 Coffee Break

10:30 **Kent Dunnington**

*"Fallen Angel Theodicies: A Philosophical Assessment"*

This talk offers a philosophical assessment of fallen angel theodicies. Fallen angel theodicies are a class of theories that try to explain the existence of some class

of evil, typically so-called "natural evil", by appeal to the sinful and destructive acts of Satan and other fallen angels. The first part of the talk is focused on the philosophical and theological promise of such theodicies, arguing that they are less popular among contemporary theorists than they should be, and that they are typically dismissed for all of the wrong reasons. The second part of the talk focuses on the real philosophical challenges that confront fallen angel theodicies, arguing that most of the challenges have to do with how such theodicies interface with prominent features of scientific orthodoxy and practice.

11:30 Coffee Break

12:00 **Piotr Roszak**

*"The Faith of Adam in Paradise. Imagining Original Justice with Aquinas"*

The description of paradise in Aquinas's theology is based on the category of *rectitudo*, which points to the state of a man living in what is called "original justice" in a realistic, not merely symbolic, way. Due to its temporality and non-definitive nature, Paradise is a time that assumed the necessity of final salvation. Therefore, the Adam's faith in Paradise is necessary as a manner of reaching heaven. His sin changes the way or circumstances the human being reaches it, but not the goal itself. In this context, Aquinas looks at the relationship between the natural and moral order and Adam's perfection before the Fall, which is relational (perfection at a given stage of

development), not absolute. The paper will present Aquinas's description of Adam's way of knowing God in Paradise (which was not the beatific vision), the nature of his faith before the Fall, and its relationship to emotions and virtues. It will also refer to Aquinas's thoughts on why the "old creation" was needed at all, rather than the "new" being established immediately. Finally, a question will be asked about the aspects of the Thomistic description of Paradise that may be still attractive to contemporary theologians, in reference to modern science.

13:00 Lunch Break

14:30 **Randall Rosenberg**

*"On the Death of Adam and Eve"*

In the wake of modern evolutionary biology, it seems difficult to understand biological death as the consequence of human sin, since God seems to have used such death as the means for creating new forms of life. Yet, Christian theology poses a tension. This tension is captured in the *Catechism of the Catholic Church's* teaching that "in a sense bodily death is natural, but for faith it is in fact 'the wages of sin'" (CCC 1005). This lecture examines Aquinas' treatment of the "naturalness" and "unnaturalness" of human death, and explores what this might teach us today as we consider the origin of life and nature before sin.

15:30 Coffee Break

16:00 Breakout Sessions

## Breakout Sessions

### Session I: Original Justice (Aula 11)

Chair: Mariusz Tabaczek, OP

16:00 **Saša Horvat**

*‘Pain in Eden: An Evolutionary Medicine Perspective’*

Pain and suffering are the basic experiences of almost every human being. Pain hurts and overwhelms our consciousness, taking control over our whole fragile body. Living without pain is not an experience the most of us are blessed with. Yet we believe that Adam and Eve lived in Eden without pain and suffering thanks to a privileged relationship with God, who kept them safe from any kind of pain sensation. Following the thought of T. Aquinas, Adam’s body was ontologically the same as ours. Today we possess the same nature as Adam, that also had the “animal life” (*vita animalis*). For example, Adam slept in Eden as sleep is a natural need of the body (Roszak, 2021). But if pain essentially determines and permeates the evolution of the human being, as well as the evolution of many other living beings, how to understand the state of Adam’s body without pain? Pain is a body alarm that warns us that something is threatening our body, for example, that body tissue is compromised. Our interaction with the world is channelled through the pain sensation. The capacity for pain helps us to survive. How then to comprehend that Adam did not feel pain, but that his body was the same as ours? In

order to better envision the possible answers to this question, in the lecture we will first consider the main theories of the evolution of pain, and then from the perspective of medicine consider the role of pain in the human body.

16:30 **Marco Vanzini**

*“The Human Condition Before Original Sin: Man as the Object of God's Paternal and Providential Care”*

The paper examines some theological reinterpretations of the dogma on the fall and the original condition of man before sin and formulates a proposal that sees in man's originally holy relationship (original holiness) with God the “context” for the exercise of God's providential and paternal care for man, which would have protected him from natural evils. It is then shown that this “physical-bodily normality” of the progenitors in such a relational context accords well with both the current scientific understanding of the world and the fundamental theological reasons of dogma.

17:00 **Wai-kin Wong**

*“Aquinas on the Cognitive Perfection of the Prelapsarian Adam”*

The underlying theme of this paper on Aquinas' view on the cognitive perfection of (the prelapsarian) Adam is the (human) soul's union with the body. I will explain (i) how Aquinas's consideration of the soul-body union pervades his understanding of Adam's cognitive perfection, (ii) how this

consideration may lead to puzzlement about Adam's cognitive perfection when compared with the separated souls', and (iii) how this puzzlement can be resolved. The puzzlement is about who can attain a more perfect cognition. Due to consideration of soul-body union, Aquinas thinks the embodied souls can attain a more perfect cognition than separated souls, then Adam should be able to attain a more perfect cognition than separated souls since Adam could attain a cognition that goes beyond a normal human being's. However, Aquinas also affirms that separated souls can see the angelic essence but Adam cannot, which suggests that the separated souls can attain a cognition that Adam could not attain. I will argue that this apparent inconsistency can be resolved by taking a closer look at Aquinas' view of separated souls' cognition of the separate substances and Adam's lack of it.

## Session II: Human Nature (Aula Minor)

Chair: Thomas Davenport, OP

16:00 **Matthew J. Ramage**

*"Sinless yet Sorrowful: How the Mariology of Aquinas and Ratzinger Illumines Suffering and Death in an Evolutionary Context"*

This paper puts the Mariological perspectives of Thomas Aquinas and Joseph Ratzinger into conversation in view of illuminating the question of whether unfallen man would have been immune from

the experience of suffering and death. An avenue of approach will be proposed in which the sorrows—and possibly death—of the Immaculate Conception may serve as a privileged lens by which to glimpse what suffering before a Fall might have looked like. While the accounts of Aquinas and Ratzinger naturally differ in many particulars, it will be argued that they concur in seeing suffering and death as features in the life of a sinless individual who made the perfect choice when it came to how she would bear her dolors as gifts that led her to greater conformity to Christ. In the end, it will be argued that the question as to whether or not the Blessed Virgin died—and whether mankind’s progenitors would have died had they not sinned—must remain an open question. However, it will be shown that Our Lady of Sorrows is uniquely important for ascertaining what it means to be human and why suffering is an integral feature of the evolutionary dynamic.

16:30 **Earl Anthony Reyes**

*“Created Nature’s Ontological Defectibility: Articulating Evil Following Aquinas”*

The problem of evil is one that causes scandal to both believers and unbelievers alike. Seeking to contribute in the dialogue on this perennial problem, this paper seeks to inquire into the structure of created reality so as to arrive at the possible origin of evil, of which sin is the penultimate specie. This aims and proposes to trace the possibility and reality of evil in a phenomenon found in created nature, itself. The

researcher does this by harping on two key-concepts from Aquinas: (1) the radical difference between the Creator and the created and (2) the real distinction between Act and Potency in created nature. The researcher devotes three sections under which this phenomenon is investigated. The first part deals with the structure of created reality, that is, what it means to be created. The second is reserved for a circumspection on what Aquinas meant with the real distinction of certain ontic principles such as act and potency in created nature. Building on the previous discussions, the third and last part presents the phenomenon itself – ontological defectibility – as something that arises from God’s act of creating but nonetheless cannot be impugned upon him as a fault and it is from which evil possibly and actually arises.

17:00 **Joachim Ostermann, O.F.M.**

*‘Being as Matter, Life, and Caring: Reconciling Ethics with Scientifically Understood Nature’*

What is life? Modern biology knows the material conditions of life, even if matter scientifically understood has an unreal or shadowy existence. Hylomorphism captures it as real but is challenged by physical reductionism’s power. Considering life as distinct from matter can be a solution. However, when life and living are abstracted from matter, they are equally unreal. It leaves us with *Naturphilosophie*, oblivious to science. We know life in material being. As such, a living being discloses its material dependencies. For human beings, these dependencies

oblige us to care, lest we sin. But these obligations would also be unreal unless considered together with matter and life. Being's form is in three ways, each complete in its own way yet none the complete form of a being. Using the Scotist concept of formal distinction, form is being as its physical structure, being as its place in life, and being as an ethical obligation for us to hear. By recognizing life distinct from its material prerequisites and its ethical consequences, we find this threefold formal distinction in form. I conclude by considering human rights and the rights of creatures.

### Session III: Original Sin (Aula Minor)

Chair: Piotr Roszak

16:00 **Oskari Juurikkala**

*“Falling into Nature: The New Thomist View of Original Sin in Dialogue with Maximus the Confessor”*

One of the big questions in contemporary theology is how the theory of evolution influences the doctrine of original sin. This paper critically engages with Daniel Houck's recent book *Aquinas, Original Sin, and the Challenge of Evolution* (2020), which proposes a new Thomist view of original sin. Houck describes the original sin as Fall not away from but rather into nature. A potential source of ambiguity in Houck's view of original sin is the relationship between the original creation of man and human nature as we know it. The paper argues that Maximus

the Confessor's logos/tropos distinction may help to clarify Thomas' intention and express the relationship between God's original creative intent and our present, empirically observed human nature with greater precision. The paper also asks whether the biological man is better characterized as the biblical 'flesh', instead of 'human nature'. It suggests that we might define the biological human being in its present state as human nature *secundum quid*, and the perfect humanity of Christ (and our humanity perfected by the grace of the Holy Spirit) as human nature *simpliciter*.

16:30 **Arvin Gouw**

*“Reconstructing the Thomistic Notion of Original Sin in Light of Evolutionary Theory”*

The concept of original sin has been challenged by modern evolutionary theory because of several reasons. First, the historicity of Adam and Eve as the source of original sin is problematic due to the group selection that takes place in evolution. Second, the evolution of humans is gradual and not linear, making it impossible to draw a line for the beginning of original sin. Third, natural selection seems to select for sinful behavior which would promote better survival, rendering God's divine action in evolution itself to be at fault instead of original sin. Building on recent Thomistic scholarship in the field, I propose two ways to address this problem. First, the notion of original sin and the fall must be distinguished. The first two problems posed by evolutionary theory are

aimed at the notion of historical fall, not of original sin per se. Following the reconstructive attempts of Brian Davies, Timothy McDermott, and Hebert McCabe, I will attempt to develop a Thomistic account of original sin that is independent of a historical fall of historical Adam and Eve. Second, I argue that there are two uses of ‘nature’ in St. Thomas’ discussion of corrupted human nature. In one sense our human nature is corrupted, following St. Thomas’ reading of St. Augustine. But in another sense, our human nature is not corrupted, because we are created good and are still ordered to our natural end. It is through grace that we are then able to attain our supernatural end. In conclusion, I argue that these two proposed readings of St. Thomas’ concept of the fall and original sin allow us to address the three aforementioned problems pertaining to evolutionary theory.

17:00 **Bartosz Adamski**

*“Why Did God Not Create Us in Heaven? The Necessity of Humankind’s in Statu Viae in Aquinas and Thomas Talbott”*

Paragraph 302 of the catechism of the Catholic Church states that the universe was created “in a state of journeying” (*in statu viae*) towards ultimate perfection. However, this teaching may not be obvious for other Christian denominations. In his book entitled *The Inescapable Love of God* (first published in 1999), Thomas Talbott, an evangelical professor of philosophy and universalist, responds to

Michael Murray, who, working under the universalist assumption of universal salvation, asks the following question: Why did God not create us all *ab initio* in the ultimate state in Heaven? The talk will compare Talbott's answer to the question posited by Murray with the teaching of Aquinas, which explains why Paradise was the right place for people before the original sin. In this way, the similarities and differences in the Aquinas's and Talbott's thinking will appear. It will serve to argue that Aquinas's argumentation is still useful and valid in contemporary debates.

## Session IV: Original Sin (Aula 11)

Chair: Thomas Davenport, OP

16:00 **Stanisław Ruczaj**

*“Explaining Grace Away: Cognitive Science of Religion and its Implications for Christian Theology”*

The process of coming to salvific faith has been traditionally portrayed by Christian theology as involving special divine activity (“grace of faith”). In my talk, I argue that the naturalistic account of the etiology of religious beliefs offered by the cognitive science of religion (CSR) challenges this theological picture. Once we arrive at a plausible story of how evolved psychological mechanisms create religious beliefs (including beliefs of Christian faith), we can dispense with the idea of additional supernatural causes being at play. Thus, CSR explains away the

grace of faith. I show how my argument has some troubling implications for other areas of classical Christian theology, such as soteriology and the doctrine of inspiration of the Holy Scripture. Finally, I argue that the only way to make room for God in the process of coming to faith is to adopt some version of theistic naturalism: the view that God acts through the natural processes described by science, for example as a first cause acting through secondary causes. Such a move, however, comes at a cost of undermining the uniqueness of Christian faith: as God acts through all natural processes indiscriminately, one cannot maintain that God is involved in any special way in the production of Christian religious beliefs, as opposed to beliefs of other religious traditions.

16:30 **Daniel Saudek**

*“Time’s Local Arrow”*

Can we speak of a “passage of time” given the absence of a global past-present-future distinction in relativity theory? This question has given rise to two groups of solutions: a. “cosmic A-theory”, which upholds a universal past-present-future distinction despite relativity theory; b. the block universe, according to which such a distinction is essentially an illusion. The aim of this contribution is to provide a much simpler solution: the difference between past and future is real, but local rather than global. It does so in three steps: 1. A derivation of the relation “before” between events is proposed; 2. A metric on

sets ordered by “before” is derived; 3. An argument is given on why the notion of changing the local past of an object is contradictory, whereas that of changing the future is not. Finally, it is shown how such a local concept of time simplifies several philosophical problems on the relationship between God and time.

## Main Presenters



**William E. Carroll** is Distinguished Visiting Professor of Philosophy at Zhongnan University of Economics and Law in Wuhan, China. He has recently retired from research and teaching in the Aquinas Institute, Blackfriars, in the University of Oxford. He is the author of *La Creación y las Ciencias Naturales: Actualidad de Santo Tomás de Aquino*, and co-author of *Aquinas on Creation*. He has

twice been Visiting Professor in the Faculty of Biological Sciences of the Pontifical Catholic University of Chile.



**Kent Dunnington** is Associate Professor and Chair of Philosophy at Biola University in La Mirada, California. He holds a doctorate degree in philosophy from Texas A&M University and a masters degree in theological studies from Duke University. His areas of interest and writing include the virtues and virtue ethics, the philosophy of addiction, and various issues in the philosophy of religion. He is the author of *Addiction and*

*Virtue* (InterVarsity Academic 2011) and *Humility, Pride, and Christian Virtue Theory* (Oxford University Press, 2020), as well as numerous scholarly and popular articles. He lives in Newport Beach, California with his wife, daughter, and bulldog.



**Kieran P. McNulty** is a professor of anthropology at the University of Minnesota, where he was awarded the McKnight Land-Grant Fellowship in 2008 and named Scholar of the College in 2017. His principal interests are in the evolution of apes and humans, pursued simultaneously through laboratory research and paleontological fieldwork,

and his work has been supported by the National Science Foundation, National Institutes of Health, Wenner-Gren Foundation, and Leakey Foundation. Kieran is Associate Editor of Paleanthropology for the flagship journal *American Journal of Physical Anthropology*, and a member of the American Association of Biological Anthropologists, Society of Vertebrate Paleontologists, and Society of Catholic Scientists. Kieran was honored by the Archdiocese of St. Paul & Minneapolis with a Leading with Faith award, and recently named a Heritage Champion by the National Museums of Kenya. He is also the founder and treasurer of Friends of KMMA-CAITHS, a charitable organization dedicated to promoting education, health, and sanitation among the rural poor of western Kenya. Kieran received his AB from Dartmouth College and his PhD from the City University of New York as part of the New York Consortium in Evolutionary Primatology.



**Randall S. Rosenberg** is Dean of the College of Philosophy & Letters and Associate Professor of Systematic Theology at Saint Louis University. He holds a Ph.D. in Systematic Theology from Boston College. He is author of *The Givenness of Desire: Concrete Subjectivity and the Natural Desire to See God* (University of Toronto Press) and co-editor of the essays of Frederick Lawrence entitled *The Fragility of Consciousness: Faith, Reason, and the Human Good* (University of Toronto Press). He has published articles in a variety of scholarly journals, including *Theological Studies*, *Angelicum*, *Gregorianum*, *Logos*, and *Heythrop Journal*. Rosenberg is currently working on a book that develops a critical conversation between Pierre Hadot and Bernard Lonergan on the recovery of the sapiential dimension of theology.



**Stan Rosenberg** is Vice President for Research and Scholarship for the Council for Christian Colleges & Universities and is the founder and Executive Director of SCIO: Scholarship and Christianity in Oxford (the CCCU's UK subsidiary). He is a member of the Faculty of Theology and Religion and of Wycliffe Hall at the University of Oxford. A fellow of the International Society for Science & Religion, he is a historian of Late Antiquity and Early Christianity focusing on Greco-Roman and early Christian cosmology, the Latin west, and Augustine, in particular. Rosenberg directs projects shaping a wide variety of international students including *Logos* (working with the Museum of the Bible for which he

is an advisor). Active in science and religion discussions, he is on the BioLogos advisory council and the general editor and an author of *Finding Ourselves after Darwin: Conversations about the Image of God, Original Sin and the Problem of Evil*, Baker Academic, 2018. Rosenberg has directed multiple science and religion projects funded by major, internationally-recognized funding bodies including two of the Templeton foundations. He is married to Joy, who is a consultant clinical audiological scientist at the national school for the deaf; born and educated in the USA, they are dual nationals and have lived in Oxford since 1999 where they raised their two children.



**Piotr Roszak** is a catholic priest of diocese of Toruń (Poland), a full professor at the Nicolaus Copernicus University in Torun, Poland and its vice-dean responsible for research strategy. He is also an associated professor of Systematic Theology at University of Navarra, Pamplona, Spain; ordinary member of the Pontifical Academy of St Thomas

Aquinas; editor-in-Chief of the journal 'Scientia et Fides', co-directed with CRYF (Navarra), devoted to dialogue between religion and science; and the director of the series 'Scholastica Thoruniensia', where the polish translations of medieval biblical commentaries are published. He is a member of the Society of Catholic Scientist. Together with prof. Sasa Horvat he is developing a Templeton grant on theodicy and evolutionary biology.



**Christopher Shingledecker** is Assistant Professor of Physics and Astronomy at Benedictine College in Atchison, KS. Previously, he was an Alexander von Humboldt Foundation postdoctoral research fellow in Germany, where he worked at both the Max Planck Institute for Extraterrestrial Physics in Munich

and the University of Stuttgart. His research is in theoretical computational astrochemistry, with a focus on prebiotic molecule formation on interstellar dust and ice. From the University of Virginia, he received both a B.Sc. in chemistry, summa cum laude, Phi Beta Kappa (2013) and later a Ph.D. (2018) in astrochemistry. He is one of the recipients of the 2017 Rao Prize and has numerous publications in journals including Science, Nature Astronomy, and the Proceedings of the National Academy of Sciences.



**Mariusz Tabaczek, O.P.**, is a Polish Dominican and theologian. He holds Ph.D. in philosophical theology from the Graduate Theological Union in Berkeley, CA and Church Licentiate from the Adam Mickiewicz University in Poznan, Poland. He is a professor of theology and member of the Thomistic Institute at the Pontifical University of Saint Thomas

Aquinas in Rome. He is interested in the science-theology dialogue, especially in the issues concerning science and creation theology, divine action, and evolutionary theory. His research also goes to other subjects related to systematic, fundamental, and natural theology,

philosophy of nature, philosophy of science (philosophy of biology, in particular), philosophy of causation, and metaphysics. His works address a whole range of topics, including: the notion of species, metaphysics of evolutionary transitions, concurrence of divine and natural causes in evolutionary transitions, definition and role of chance and teleology in evolution, classical and new hylomorphism, classical and contemporary (analytical) concepts of causation, emergence, science-oriented panentheism and its critique, and various aspects of divine action in the universe. He published a number of articles on metaphysics and the issues concerning the relation between theology and science, and two monographs: *Emergence. Towards A New Metaphysics and Philosophy of Science* (University of Notre Dame Press 2019) and *Divine Action and Emergence. An Alternative to Panentheism* (University of Notre Dame Press 2020).

## Breakout Session Presenters

**Bartosz Adamski** is a priest of the Diocese of Toruń in Poland and a doctoral student of systematic theology at the Faculty of Theology of the University of Navarra. In his theological research, he works on the theme of divine and human freedom in St. Thomas Aquinas and Thomas Talbott.

**Arvin Gouw**, PhD is currently doing research in theology at Cambridge University. Prior to Cambridge, he has served as an instructor at Stanford University School of Medicine and faculty affiliate at Harvard Center for Science, Religion, and Culture. He did his fellowship on science and religion at Princeton Theological Seminary. He has a PhD from Johns Hopkins University School of Medicine, MPhil in philosophy from the University of Pennsylvania, MA in theology from St. Mary's Seminary and University Ecumenical Institute of Theology, and MA in endocrinology and BA in molecular cell biology–neurobiology from UC Berkeley. His most recent work is a co-edited volume with Ted Peters and Brian Green entitled *“Religious Transhumanism and Its Critics”* (Rowman & Littlefield 2022).

Doc.dr.sc. **Saša Horvat** is a philosopher and works as an assistant professor at the Department of Social Sciences and Medical Humanities, Faculty of Medicine, University of Rijeka, Croatia. His main philosophical interests are neurophilosophy, philosophy of religion, science and religion, and others. He is the principal investigator in two scientific projects: *“The religious experience of children with autism spectrum disorder”* (with Tanja Horvat) and *“The Dynamic Theodicy Model: understanding God, Evil and Evolution”* (with Piotr Roszak). He is the initiator and head of the organising committee of the international interdisciplinary conference *“Rijeka’s scientific bridges”* in Rijeka, Croatia. During the academic year 2021 - 2022, he

is a visiting professor at the Faculty of Theology of Nicolaus Copernicus University in Toruń, Poland.

**Oskari Juurikkala** is a postdoctoral researcher in theology at the Åbo Akademi University, Finland. He wrote his doctoral thesis at the Pontifical University of the Holy Cross in Rome on the metaphor of the book of nature in patristic and medieval theology. He is currently working on the idea of God's two books with Giuseppe Tanzella-Nitti. Juurikkala also has doctorates in economics and law, and he is an associate professor (docent) of law and economics at the University of Helsinki.

**Joachim Ostermann, OFM**, holds a doctorate in biochemistry from the University of Munich. After a career in universities and biotechnology companies in the US and Canada, he changed course and became a Franciscan friar. His scientific research interests were the mechanism of intracellular protein transport and the use of proteomics to understand disease mechanisms. Now they are the relationships between modern science, the Franciscan view of nature, and Christian faith. He lives in Montreal as a member of the Canadian Province of the Order of Friars Minor. His most recent publication is "Remembering Francis: Making Sense of Modern Life", published by the Franciscan Institute Press at St. Bonaventure University. His next manuscript is entitled "Praising the Creatures: Being and Creative Care," from which the contribution to this conference is taken. For rest and relaxation, he writes for young adults about how the hope of Christian life deconstructs despair as articulated in popular fantasy and superhero films.

**Dr. Matthew Ramage** is Professor of Theology at Benedictine College where he is co-director of its Center for Ecological Stewardship. He is also Adjunct Professor and concentration chair of Sacred Scripture for the Holy Apostles College and Seminary graduate program. His monographs include *"Dark Passages of the Bible: Engaging*

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