

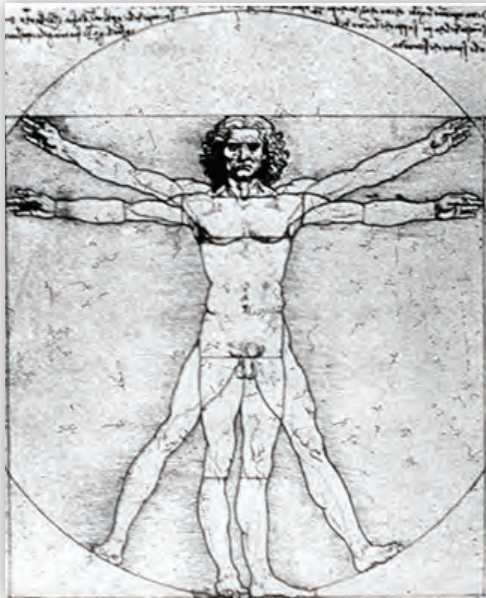
# Leonardo da Vinci

INVENTING THE FUTURE:

FLIGHT, AUTOMATA, ART, ANATOMY, BIOMORPHISM

OCTOBER 18-19, 2019

A Conference at UCLA California NanoSystems Institute (CNSI)



Presented by UCLA Center for Medieval & Renaissance Studies,  
UCLA Cardiac Arrhythmia Center, David Geffen School of Medicine at UCLA,  
and Caltech

Organized by Noel G. Boyle (Professor of Medicine/Cardiology, UCLA),  
Massimo Ciavolella (Professor of Italian and Comparative Literature, UCLA),  
Morteza Gharib (Professor of Aeronautics and Bioinspired Engineering,  
Caltech), and Francis Wells (Cardiac Surgeon, Royal Papworth Hospital, and  
Cambridge University, UK)

**UCLA** Center for Medieval & Renaissance Studies

On May 2, 1519, a great mind was extinguished. Leonardo da Vinci, polymath and true genius of the Renaissance left this world. Recognized as unique and special in his own time as well as our own, Leonardo's paintings were highly sought after and his skills in engineering and hydrodynamics placed him in a category apart from his fellow artists. His private notebooks on scientific, anatomical, and engineering studies reveal a gifted endlessly enquiring mind that has caught the imagination of today's scholars in many disciplines.

Rather than simply celebrating Leonardo's life, works, and scholarship, this conference approaches Leonardo's influence in a novel way, musing on how Leonardo himself might have reflected on this auspicious anniversary. His desire for new knowledge and understanding would have driven him to look forwards rather than back.

To that end, this conference takes as its starting point four foci of Leonardo's work—Flight, the Heart, Robotics & Artificial Intelligence, and the Environment—and looks into the future and what may be waiting for mankind as our knowledge and impulse to explore the unknown unfolds over time.

The conference is accompanied by an exhibition of relevant facsimiles of Leonardo's drawings matched with photographs of contemporary dissections and modern artistic works from the Department of Artistic Anatomy of the Academy of Fine Arts in Venice. Items from the Elmer Belt Library of Vinciana in the UCLA Library Special Collections will also be on display. Additionally, a film on the life of Leonardo will be shown in collaboration with the Italian Cultural Institute of Los Angeles.

Our hope is that through this innovative program we will use the inspiration and example of Leonardo to re-ignite the enthusiasm for research and challenge in this generation and the next, and to develop the most distinguishing of human features, the enquiring and challenging mind.

*Support for this conference is provided by*  
*The Ahmanson Foundation*  
*Beverly Hills Porsche*  
*Caltech*  
*Fulgent Genetics*  
*Kairos Venture Investments LLC*  
*UCLA Art | Sci Center + Lab*  
*UCLA Cardiac Arrhythmia Center*  
*UCLA Center for Medieval and Renaissance Studies*

**FRIDAY, OCTOBER 18, 2019 | UCLA CNSI AUDITORIUM**

8:00 Continental Breakfast

8:30 Welcoming Remarks & Introductory Concept of the Meeting

**Zrinka Stahuljak**, PhD (Director, UCLA Center for Medieval & Renaissance Studies)

**David Schaberg**, PhD (Dean of Humanities, UCLA College)

**Lee Walcott** (Managing Director Emeritus, the Ahmanson Foundation)

**Francis Wells**, FRCS (Conference Co-organizer)

8:45 Opening Lecture, introduced by **Massimo Ciavolella**, PhD  
(Conference Co-organizer)

*Leonardo and His Place in the Renaissance*

**Kenneth Bartlett**, PhD (Professor of History and Renaissance Studies, University of Toronto)

**Session I: Flight — Francis Wells, FRCS — Chair**

“When once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been and there you will always long to return.”

– Leonardo da Vinci

9:30 *Leonardo and Flight*

**Matthew Landrus**, PhD (Research Fellow, Wolfson College, University of Oxford)

10:00 *Birds, Airplanes and Leonardo's Fliers: Modern Perspectives on Renaissance Dreams of Flight*

**Charles Adler**, PhD (Professor of Physics, St Mary's College of Maryland)

10:30 Coffee break / Exhibits open

11:00 *Leonardo on Flight: an Historical Introduction*

**Domenico Laurenza**, PhD (Museo Galileo, Florence)

11:30 *Lunar Men: From Leonardo to the 19th Century*

**Maite Alvarez**, PhD (Project Specialist, The J. Paul Getty Museum)

12:00 *The Golden Age of Space Exploration: Now and in the Future*

**Charles Elachi**, PhD (Former Director, Jet Propulsion Laboratory; Professor Emeritus, Electrical Engineering and Planetary Science, Caltech)

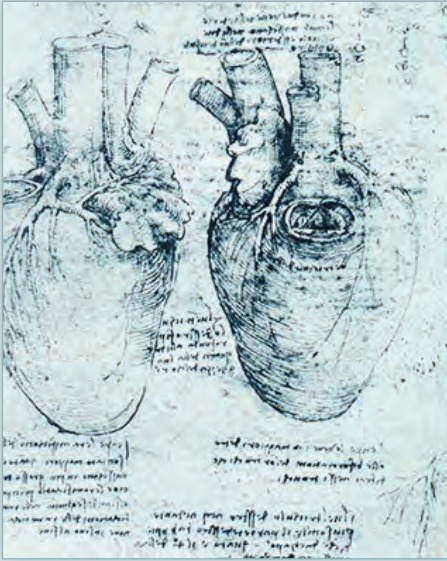
12:30 Lunch break / Exhibits open

1:45 Special Guest Lecture: Introduced by **Francis Wells**, FRCS

*The Golden Age of Space Flight*

Colonel **Walter Cunningham** (Apollo 7 Astronaut, Houston)

2:45 Coffee break / Exhibits open



## Session 2: Leonardo and the Heart – Noel Boyle, MD, PhD – Chair

“With what words will you describe this heart so as not to fill a book?”

– Leonardo da Vinci

3:00 *The Heart of Leonardo*

**Francis Wells, FRCS** (Senior Cardiothoracic Surgeon, Royal Papworth Hospital and Cambridge University)

3:30 *The Detailed Representation of the Human Heart: The Work of McAlpine and Others in the Modern Context*

**Kalyanam Shivkumar, MD, PhD** (Professor of Medicine, Radiology and Bioengineering, UCLA)

4:00 *The Ultra-Modern Computer-Generated Imaging of the Heart and Its Use in Teaching, Research, and Clinical Practice*

**Shumpei Mori, MD** (Research Associate, Kobe University, Japan and UCLA)

4:30 *The Transparent View: Artistic Anatomy at the Academia of Fine Arts in Venice*

**Roberta Ballestriero, PhD** (Associate Lecturer, University of the Arts London)

**Mauro Zocchetta, PhD** (Professor, Academy of Fine Arts in Venice)

5:00 Reception

6:00 Screening of the documentary film *Being Leonardo da Vinci* (2019), directed by **Massimiliano Finazzer Flory** and produced by RAI Cinema. In Italian with English subtitles (1 hour, 20 minutes). Director in attendance. In collaboration with the Italian Cultural Institute of Los Angeles.

**SATURDAY, OCTOBER 19, 2019 | UCLA CNSI AUDITORIUM**

9:00 Continental Breakfast

**Session 3: Disruptive Technologies, Leonardo and Robotics & Artificial Intelligence – Morteza Gharib, PhD – Chair**

“Men of lofty genius when they are doing the least work are most active.”

“Nature never breaks her own laws.” – Leonardo da Vinci

9:30 *Leonardo and Robotics*

**Sara Tagliagamba**, PhD (Post-doctoral Fellow, Université Paris 1 Panthéon-Sorbonne, Ecole Pratique des Hautes Etudes, Paris)

10:00 *Deep Learning, Leonardo Style*

**Morteza Gharib**, PhD (Professor of Aeronautics and Bioinspired Engineering, Caltech)

10:30 Coffee break / Exhibits open

11:00 *From Man to Molecules: Nano-Technology and the Next “Big Bang”*

**James Gimzewski**, FRS (Distinguished Professor of Chemistry and Biochemistry, UCLA)

11:30 *Disruptive Technologies and their Effect on the Modern World*

**Roger Malina**, PhD (Professor of Arts & Technology and Professor of Physics, University of Texas, Dallas)

12:00 Lunch break / Exhibits open

**Session 4: Art Meets Science – Roger Malina, PhD; Chair**

“Learning acquired in youth arrests the evil of old age and if you understand that old age has wisdom for its food, you will so conduct yourself in youth that your old age will not lack for nourishment.” – Leonardo da Vinci

1:30 *What Would Leonardo’s Visual Strategies Be for Compelling Action on the Climate Crisis?*

**Claire Farago**, PhD (Professor Emerita, University of Colorado Boulder)

2:00 *Vitruvian Man: From Vitruvius to Leonardo*

**Victoria Vesna**, PhD (Professor of Design and Media Arts, UCLA)

2:30 *The Elmer Belt Library of Vinciana*

**Victoria Steele**, PhD (Curator, UCLA Collections)

3:00 Concluding Remarks by the Conference Organizers

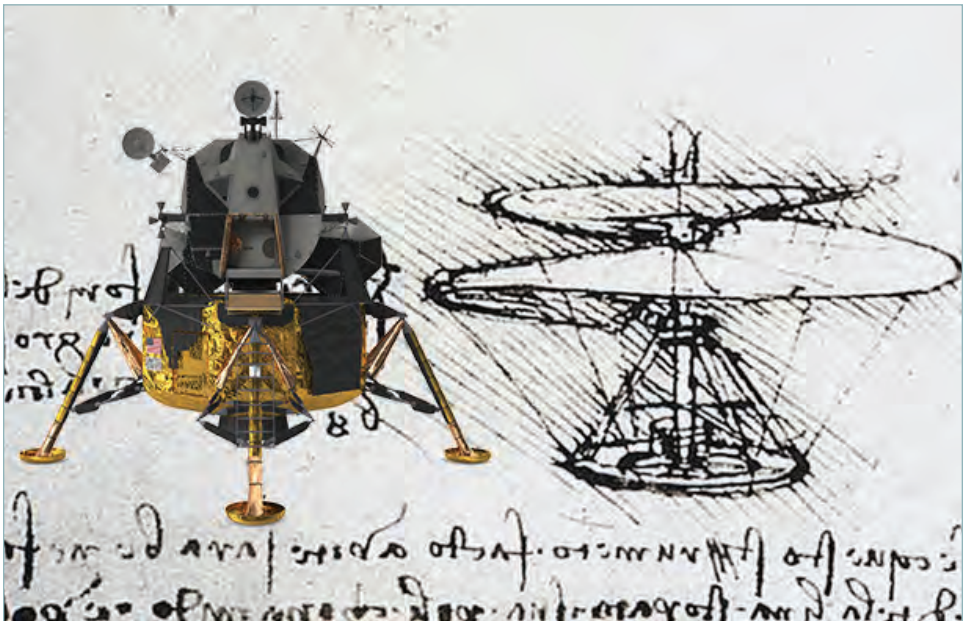
3:30 Exhibits open

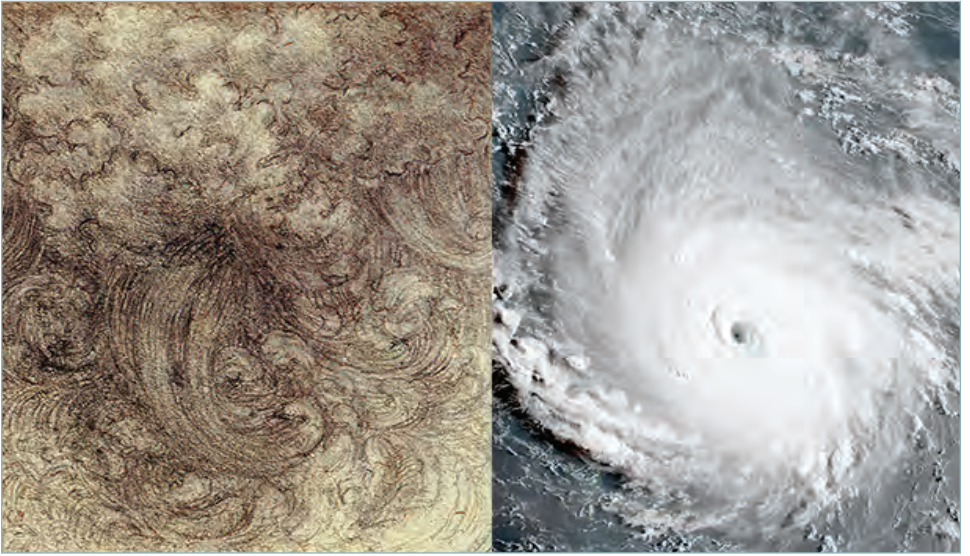
5:30 Concert | Schoenberg Hall Auditorium

*Chopin Etudes, Bk 1, & Etudes by Russian composers including Rachmaninoff*  
**Patrick Hemmerlé** (Concert Pianist, Diploma Paris Conservatoire; Cambridge, UK)

## EXHIBITION (CNSI 5th floor)

- Facsimiles of some of Leonardo's drawings of the heart. Courtesy of Francis Wells.
- Photographs of the ox-heart dissections carried out by Leonardo. Courtesy of Ben Edwards at erproductions.co.uk.
- A working model of the aortic root demonstrating aorto/pulmonary valve closure: an imagining 500 years ahead of its time. Courtesy of Professor Morteza Gharib.
- Drawings from the Department of Artistic Anatomy at the Academy of Fine Arts in Venice: "The Transparent View." Courtesy of Professor Mauro Zocchetta and Dr. Roberta Ballestriero.
- Preserved dissected specimens of the ox heart repeating the dissections of Leonardo. Courtesy of Professor Robert Anderson, Francis Wells, and Dr. Martin Goddard, Royal Papworth Hospital, Cambridge, UK.
- Bird Song Diamond: Art Installation. Courtesy of Professor Victoria Vesna.
- Heart Whispers: The Speaking Heart. Courtesy of Pascale Pollier, member of the Medical Artists Association and Medical Illustration Practitioner accredited by the Academy for Health Care Science.
- Gold & Silver Hearts. Courtesy of Professor Jane Prophet.
- *The Heart of Leonardo*, a short documentary about the heart dissections of Leonardo da Vinci (Popov Productions Inc). Courtesy of Professor Robert Anderson, Dr Martin Goddard, and Francis Wells.
- Bird Flight: Natural Photography. Courtesy of Owen Burke.
- Examples of books and manuscripts from Leonardo's library. Courtesy of UCLA Library Special Collections (in the Powell Library Rotunda).





Registration is required. No fee. Limited seating.  
Register to attend at [cmrs.ucla.edu/conference/leonardo](https://cmrs.ucla.edu/conference/leonardo)

The California NanoSystems Institute conference room is located directly off the Court of Sciences. The building's street address is 570 Westwood Plaza, Building 114.

Self-pay parking is available in Structure 8. Parking information at  
[main.transportation.ucla.edu/campus-parking/visitors](https://main.transportation.ucla.edu/campus-parking/visitors)

Maps and directions at  
[ucla.edu/maps-directions-parking/](https://ucla.edu/maps-directions-parking/)

[cmrs@humnet.ucla.edu](mailto:cmrs@humnet.ucla.edu) | 310-825-1880 | [cmrs.ucla.edu](https://cmrs.ucla.edu)

*Leonardo da Vinci*

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