**THE ALBERT LEON WHITEMAN MEMORIAL MATHEMATICS LECTURES**
April 29 and 30, 2019

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**Sundials, old and contemporary**

**Monday, April 29, 2019**

**Gerontology Auditorium**

**Time:** 3:30-4:00 pm: Reception in the Gerontology Courtyard

**Time:** 4:00-5:00 pm: LECTURE - Gerontology: Leonard Davis Auditorium, GER 124

**Abstract:**
Since Antiquity, the shadow of a stick has been used to "tell the time". There is an incredible number of different styles of sundials. In mathematics, the geometry of shadows is called "projective geometry". The talk will feature some very old sundials, as well as more modern ones that use fractal geometry.

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**Singularities of planar analytic curves**

**Tuesday, April 30, 2019**

**1:30-2:00 pm:** Tea in Kaprielian Hall, KAP 410

**2:00-3:00 pm:** LECTURE in Kaprielian Hall, KAP 414

**Abstract:**
In the neighborhood of a singular point, a real analytic curve in the plane consists of a finite number of branches. Each of these branches intersects a small circle around the singular point in two points. Therefore, the local topology is described by a chord diagram: an even number of points on a circle paired two by two. Not all chord diagrams come from a singular point. The main purpose of this talk is to give an complete description of those « analytic » chord diagrams. On our way, we shall meet some interesting concepts from computer science, graph theory and operads.

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**Étienne Ghys**
École Normale Supérieure, Lyon, France

Étienne Ghys is a French mathematician. His scientific contributions deal with the geometry and topology of dynamical systems. For instance, one of his results allows a better understanding of the famous Lorenz butterfly, a paradigmatic object in chaos theory. Working as a senior researcher in CNRS (French National Center for Scientific Research), he has been instrumental in the creation and development of the mathematics department in the Ecole Normale Supérieure, in Lyon. More recently he has been involved in several actions towards the public dissemination of mathematics, for instance through the creation of an online journal aimed at a general public, or the production of mathematical movies. He received the Clay award for the dissemination of mathematics. His most recent book (A singular mathematical promenade) proposes a visual approach to the theory of singularities of planar curves. He has been elected Permanent Secretary of the French Academy of Sciences in January 2019.

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An event co-organized by the USC Department of Mathematics and the Consulate General of France in Los Angeles, and graciously hosted by Professor Kelvin Davies, USC Leonard Davis School of Gerontology/Ethel Percy Andrus Gerontology Center.