Historical overview from a volunteer‘s perspective

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About me

- enthusiastic BOINC volunteer since 2004
- co-administrator of SETI.Germany
- co-organizer of the BOINC Pentathlon

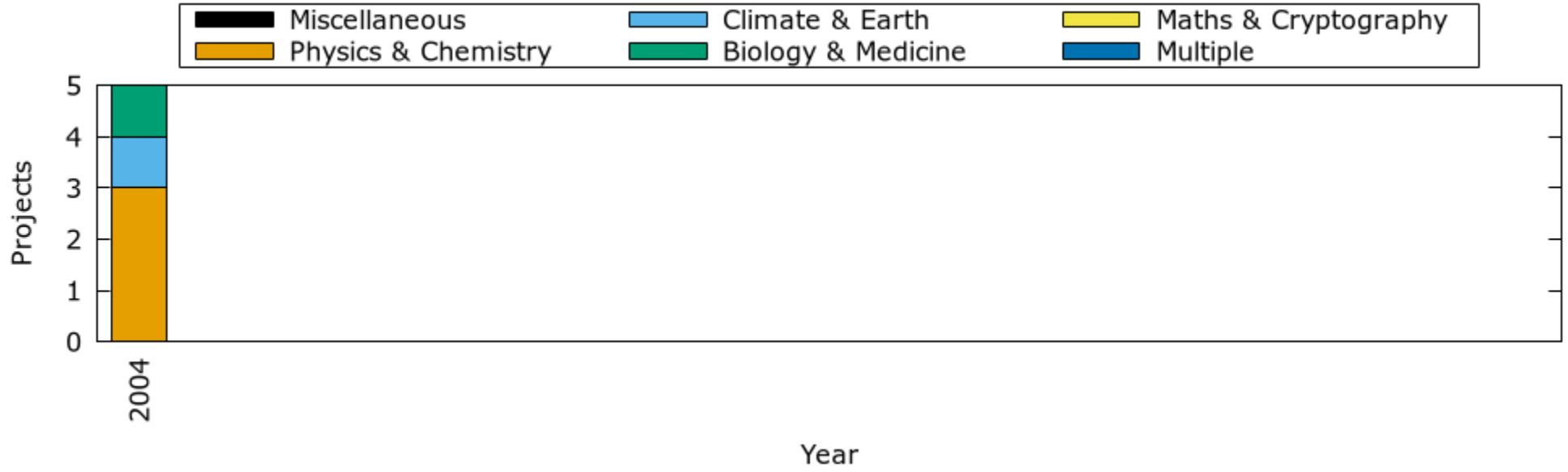
- postdoctoral researcher in stellar astrophysics

Hard facts: significant developments and number of active BOINC projects over time

- BOINC features and hardware evolution
- active projects:
  - only projects open to the public
  - no test-only projects
  - projects that started over or merged count only once
  - project end ~ last year with granted credit
  - 162 projects were active at some point since 2004

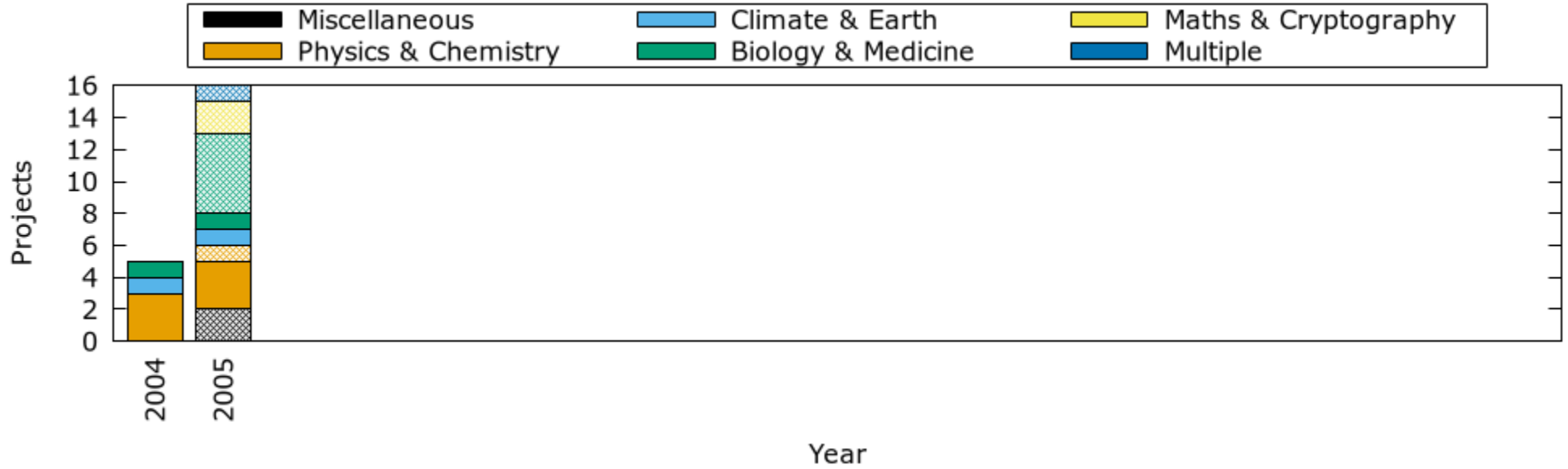
2004

- SETI@home, Predictor@home, climateprediction.net, LHC@home, (Einstein@Home)
- first AMD64-compatible Intel CPUs (Pentium 4F), last AMD CPUs without 64-bit instructions



2005

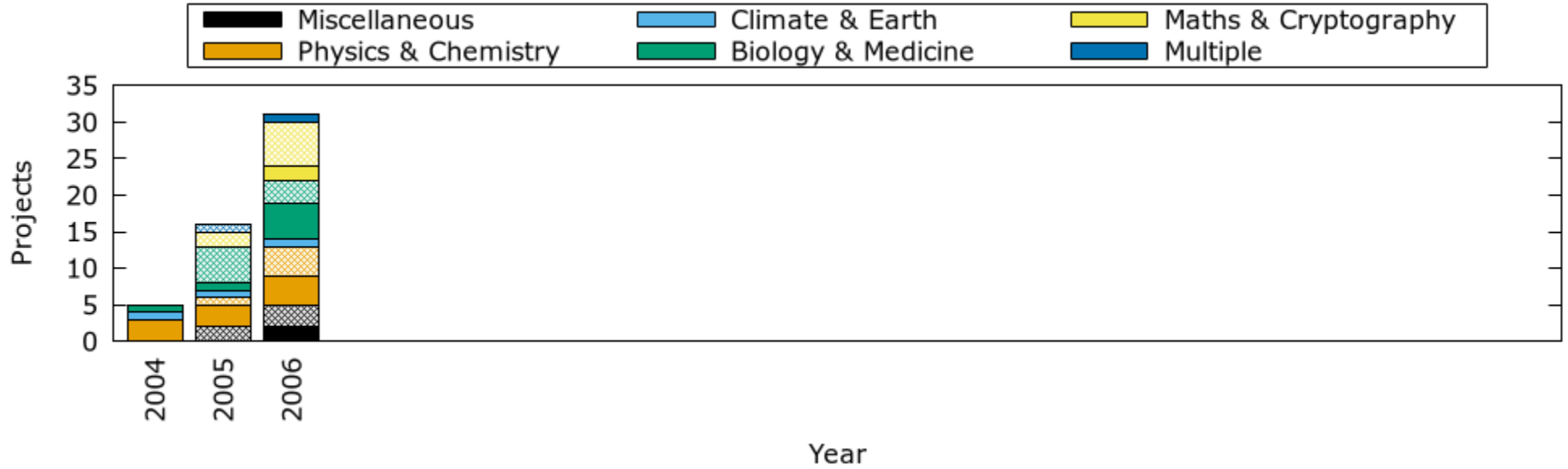
- password-based authentification
- earliest-deadline-first mode
- BOINC 5.2
- first BOINC Workshop
- first dual-core mainstream CPUs (Intel Pentium D)



2006

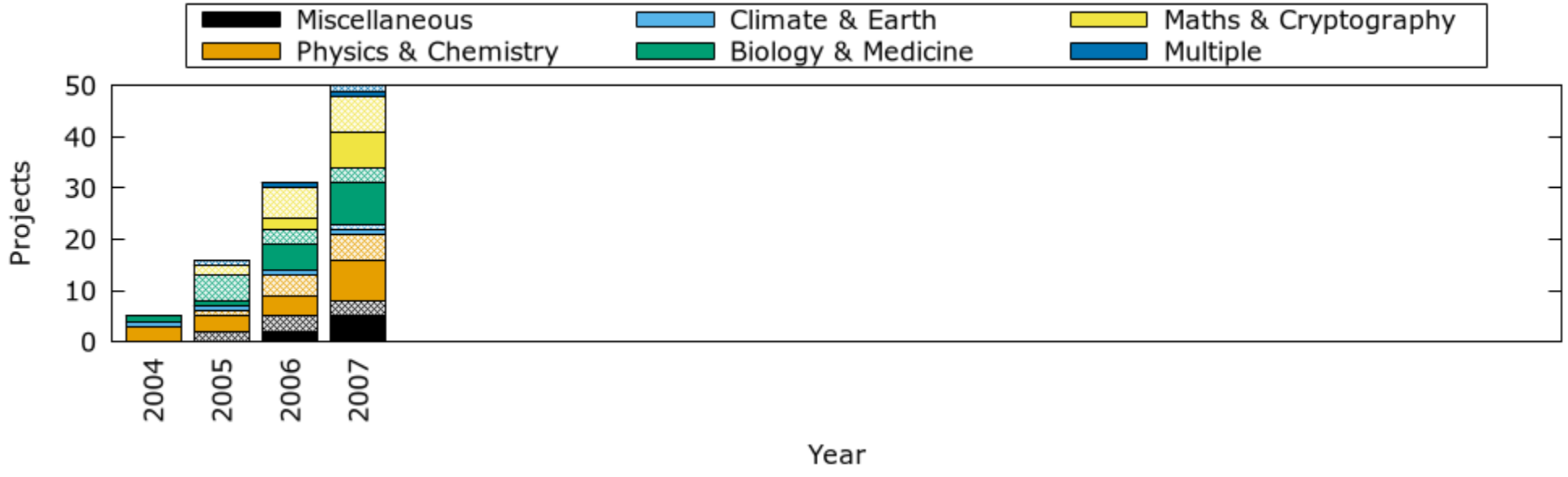
- account managers
- BOINC 5.6

- multi-core CPUs becoming more common:
  - Intel Core2 Duo/Quad
  - AMD Athlon X2
- first CUDA-capable NVIDIA GPU (GeForce 8800 GTX)



2007

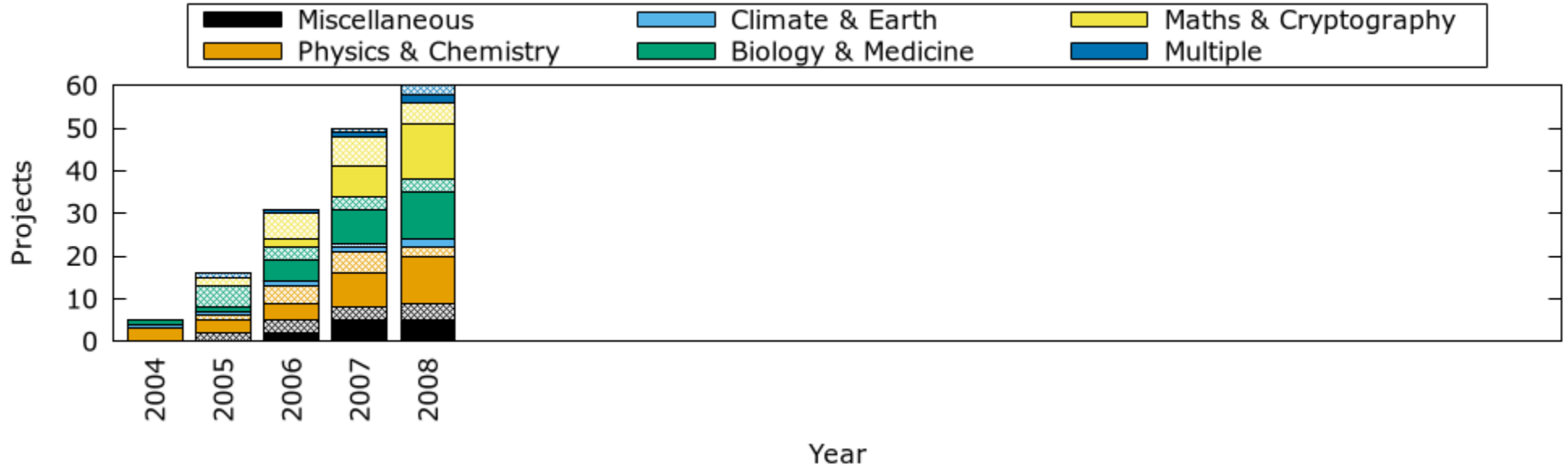
- BOINC 5.10 (first official 64-bit client release)
- PlayStation 3 supported by PS3GRID and yoyo@home
- → , →



- AMD Phenom X4
- ATI Radeon HD 2000/3000

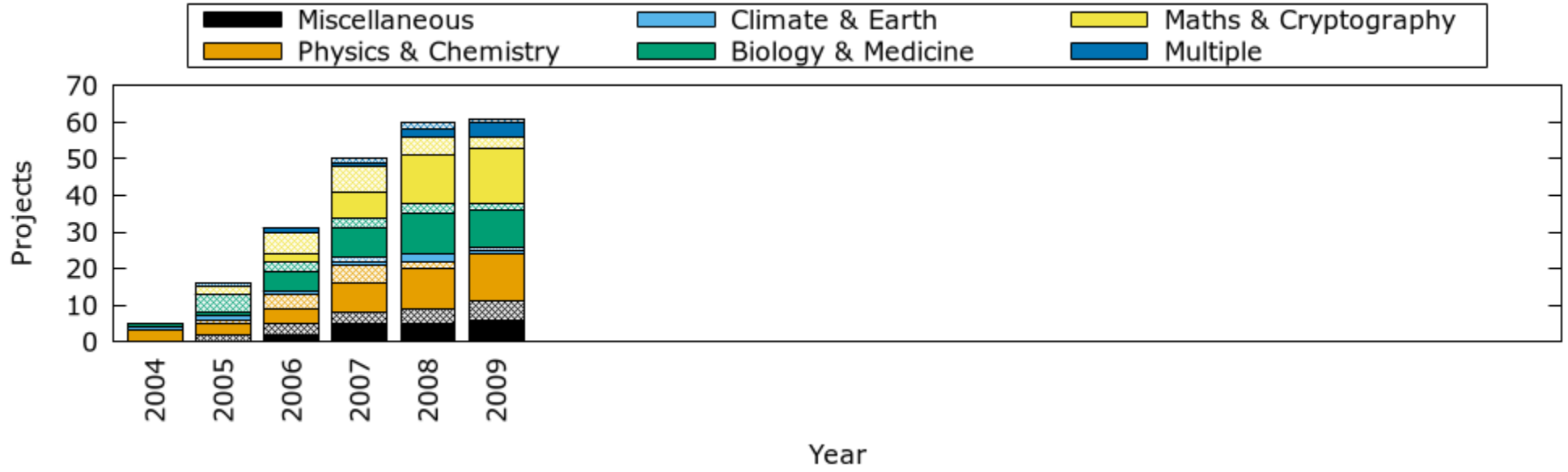
2008

- PS3GRID → GPUGRID
- BOINC 6.2 (first version with NVIDIA GPU support)
- Intel Core i7 (hyperthreading returns)
- NVIDIA GeForce 9
- ATI Radeon HD 4000



2009

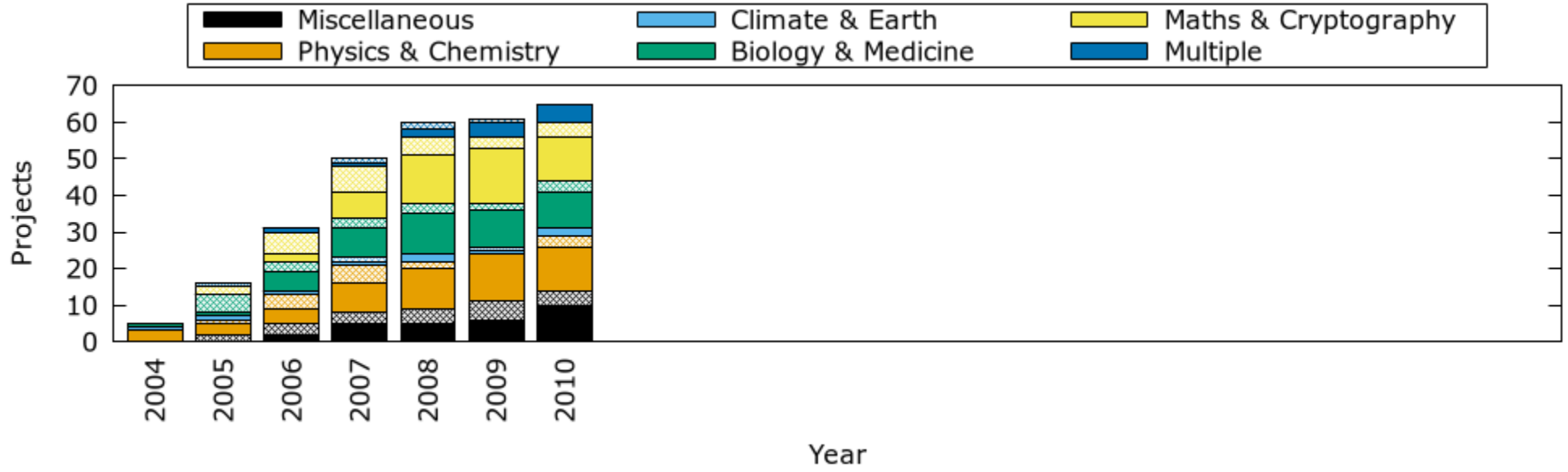
- BOINC 6.10 (first version with ATI GPU support)
- client now requests tasks for *N* CPU cores
- NVIDIA GeForce 200
- ATI Radeon HD 5000



2010

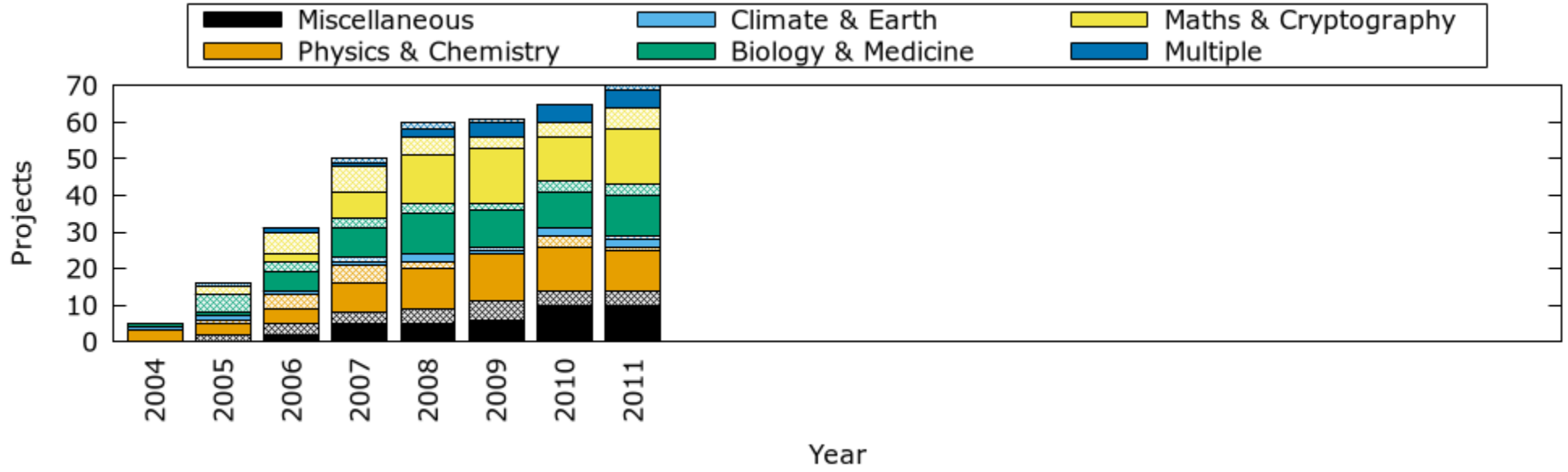
- CreditNew 😐
- first BOINC Pentathlon

- Intel Core i7 970/980X (6 cores)
- AMD Phenom II X6
- NVIDIA GeForce GTX 400/500
- AMD Radeon HD 6000 (no longer ATI)



2011

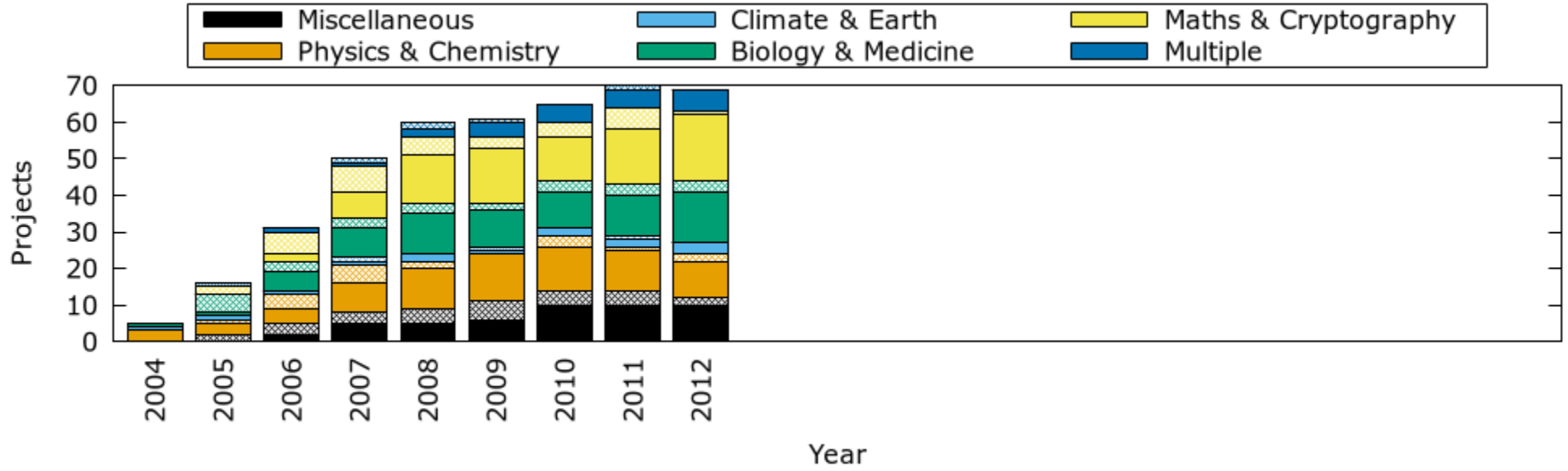
- BOINC 6.12
- project news shown in BOINC Manager
- VirtualBox integration
- Intel Core i 2nd gen.
- AMD FX-8000 (8 FPUs)



2012

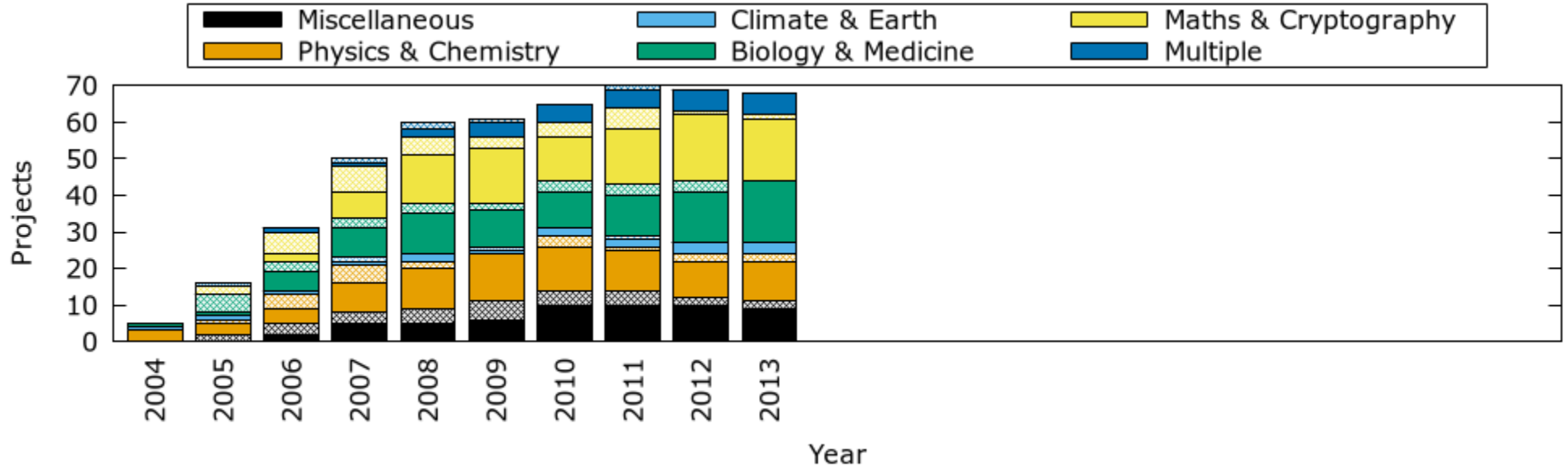
- BOINC 7.0
- OpenCL support for NVIDIA and AMD GPUs

- Intel Core i 3rd gen.
- Raspberry Pi (ARM)
- NVIDIA GeForce GTX 600
- AMD Radeon HD 7000
- first OpenCL-capable Intel IGPs



2013

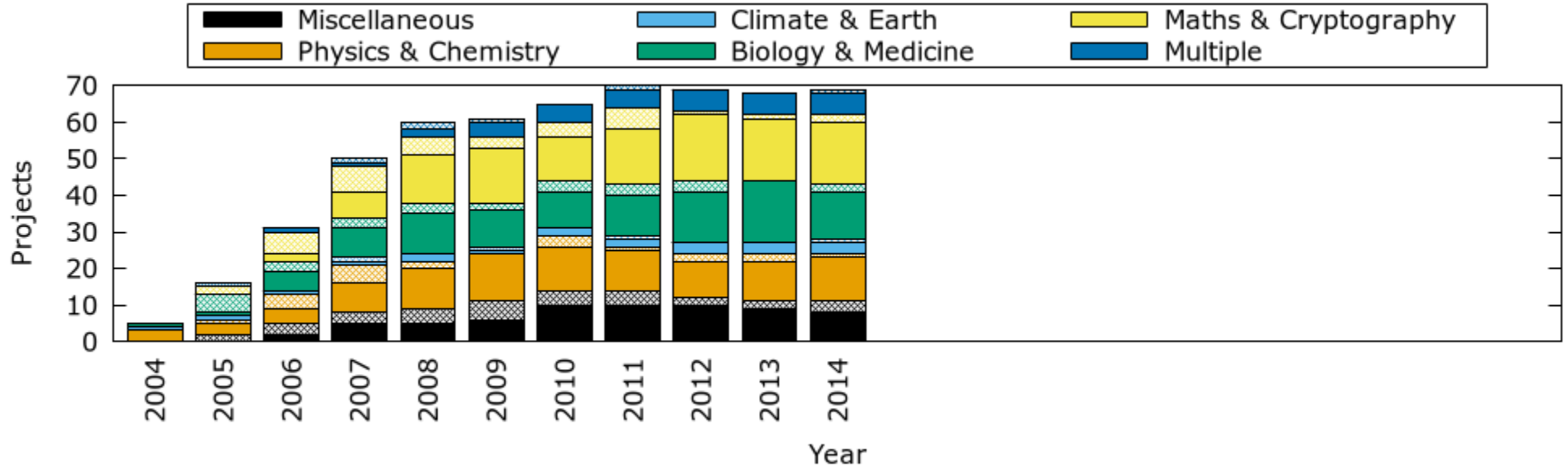
- Intel GPU support (OpenCL)
- BOINC 7.2 (first official client release for Android)
- Intel Core i 4th gen.
- NVIDIA GeForce GTX 700
- AMD Radeon 200



2014

- BOINC 7.4

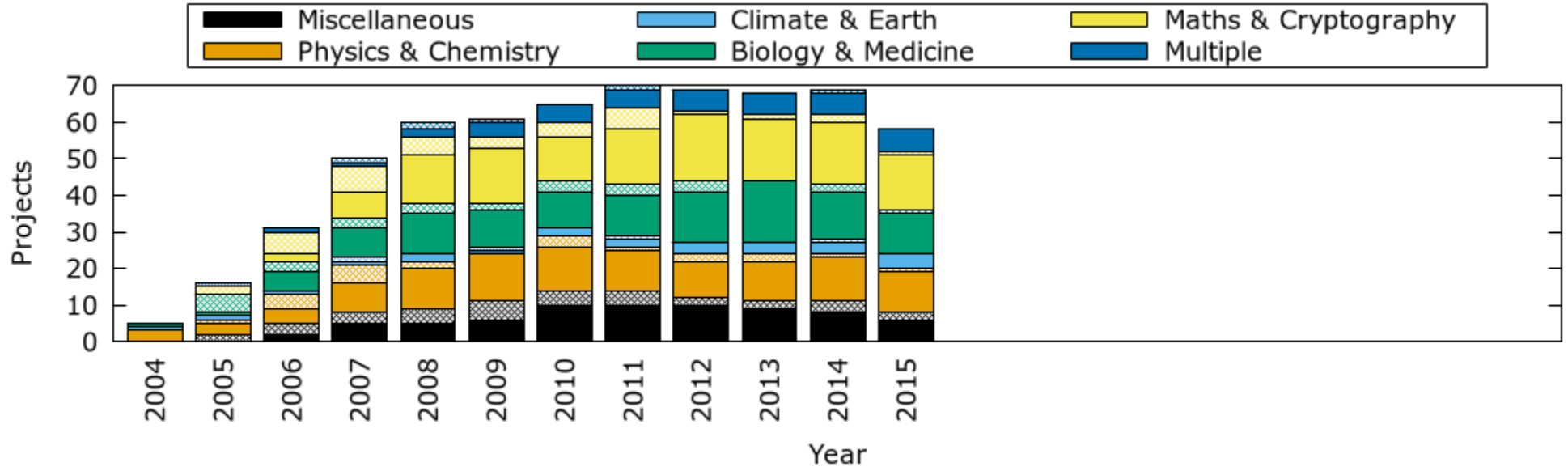
- Intel Core i7 5960X (8 cores)
- Intel Core i 5th gen.
- NVIDIA GeForce GTX 900



2015

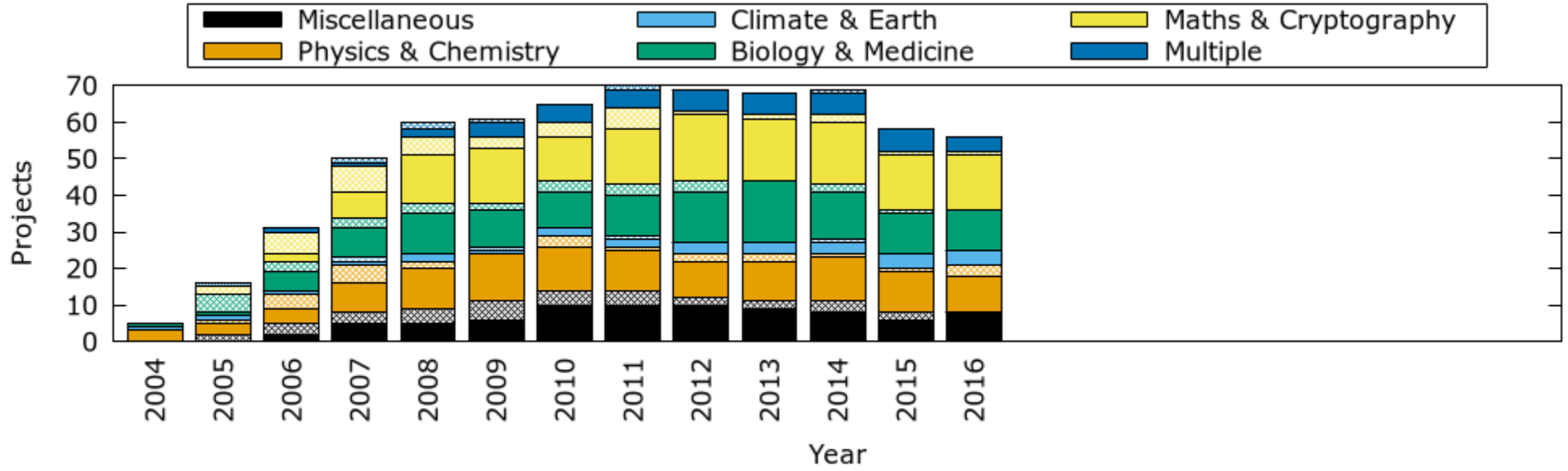
- BOINC 7.6

- Intel Core i 6th gen.
- Raspberry Pi 2
- AMD Radeon 300



2016

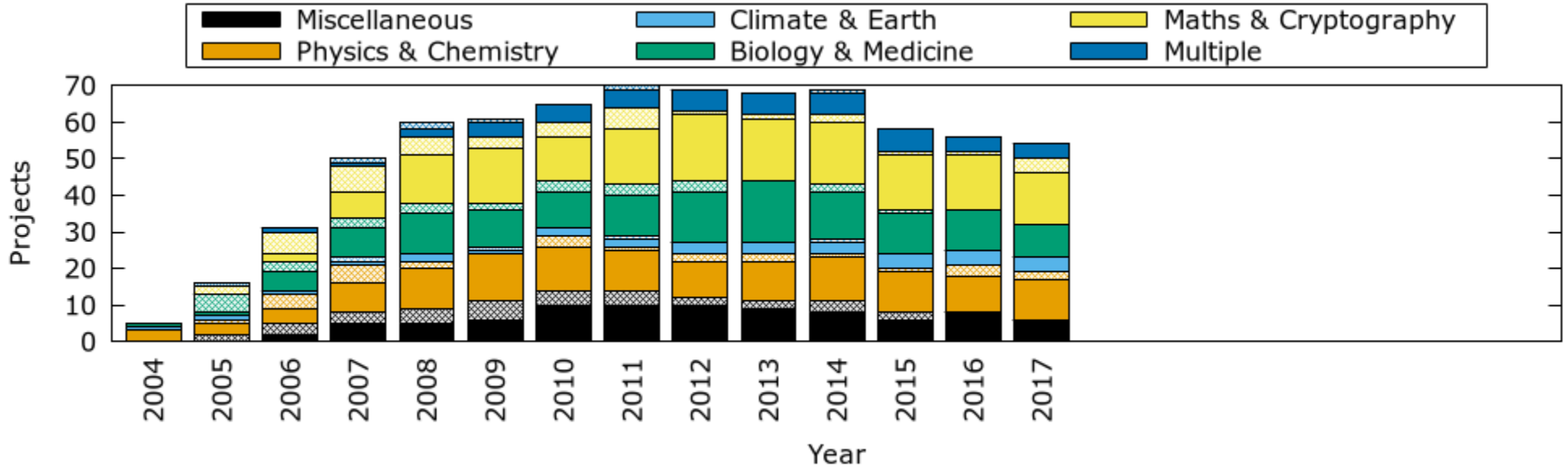
- Intel Core i7 6950X (10 cores)
- Raspberry Pi 3
- NVIDIA GeForce GTX 1000
- AMD Radeon 400



2017

- BOINC 7.8

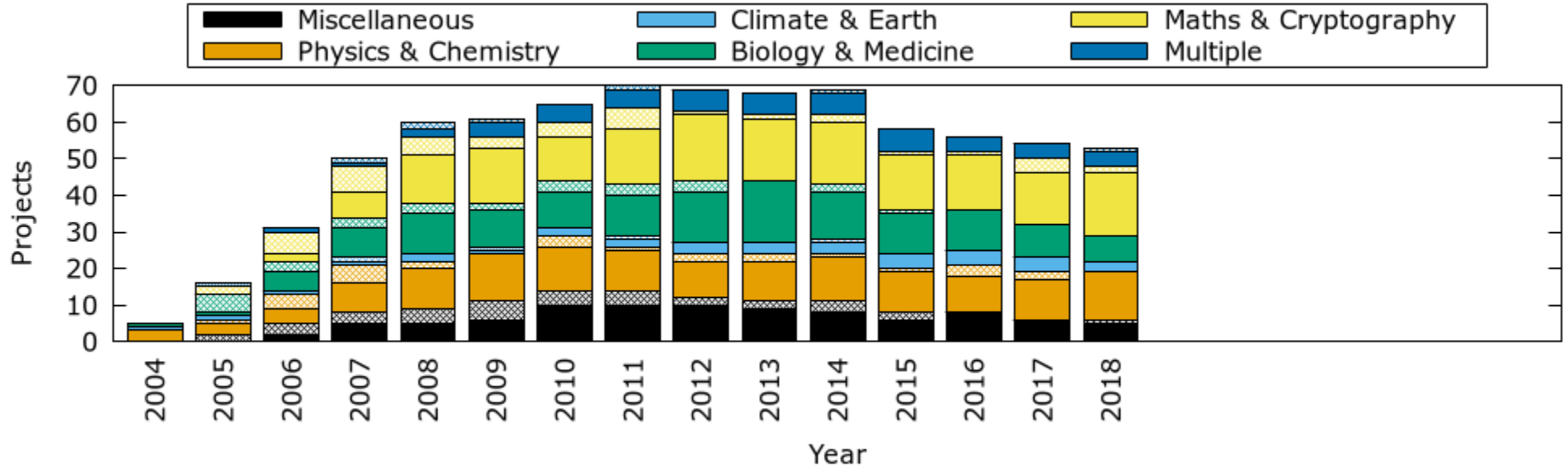
- Intel Core i9 7980XE (18 cores)
- Intel Core i5/i7 8000 (6)
- AMD Ryzen Threadripper 1950X (16)
- AMD Ryzen 7 1000 (8)
- AMD Radeon 500, RX Vega



2018

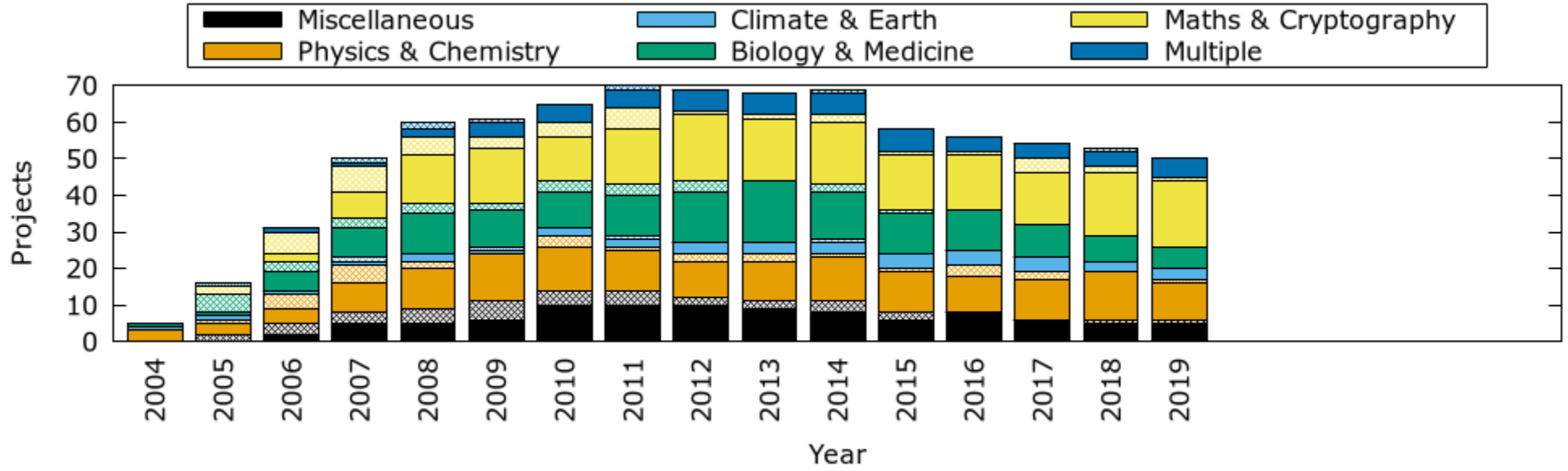
- BOINC 7.14

- Intel Core i7/i9 9000 (8 cores)
- AMD Ryzen Threadripper 2990WX (32)
- AMD Ryzen 7 2000 (8)
- NVIDIA GeForce RTX 2000



2019

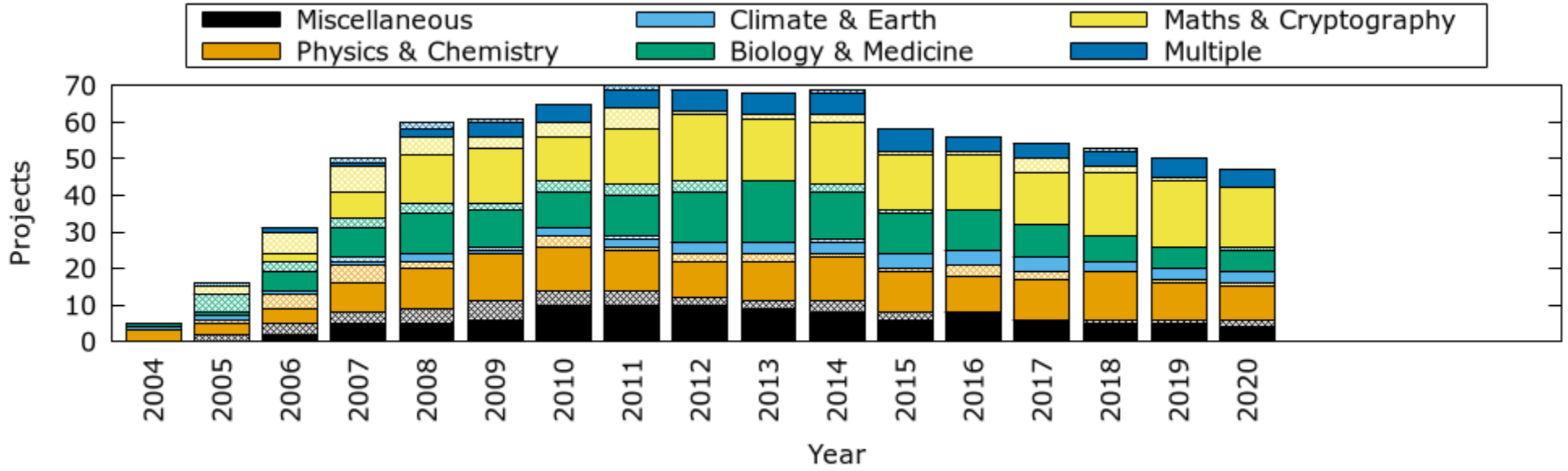
- Intel Core i9 10000 (10 cores)
- AMD Ryzen 9 3950X (16)
- Raspberry Pi 4
- AMD Radeon 600, RX 5000



2020

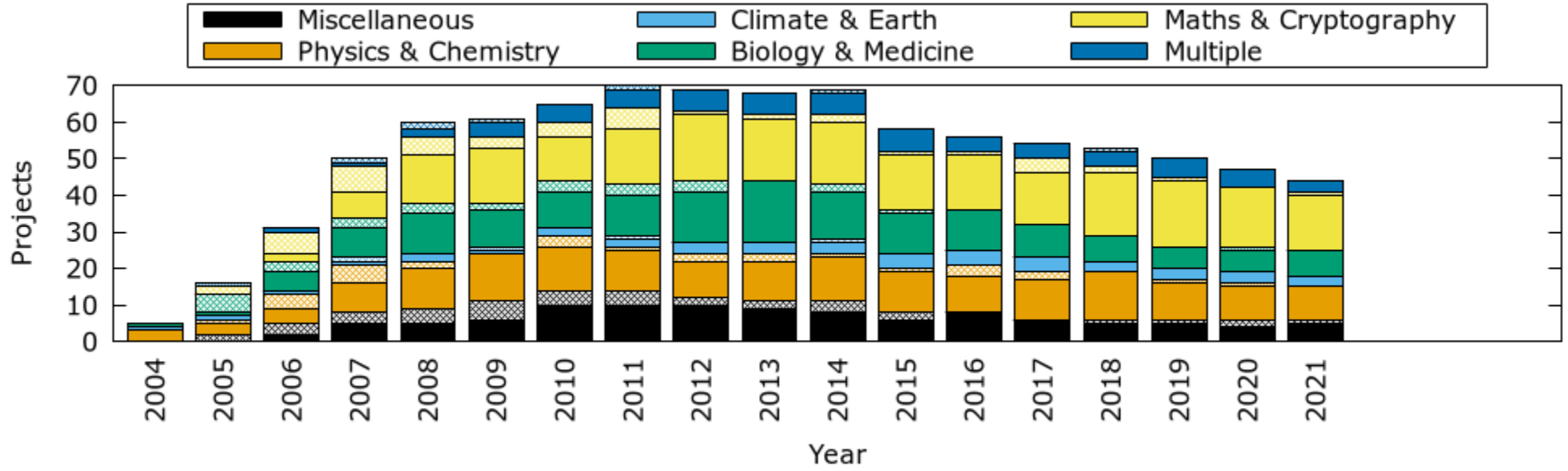
- BOINC 7.16
- COVID-19

- AMD Ryzen Threadripper 3990X (64 cores)
- AMD Ryzen 5000
- Apple M1 (ARM)
- NVIDIA GeForce RTX 3000
- AMD Radeon RX 6000



2021

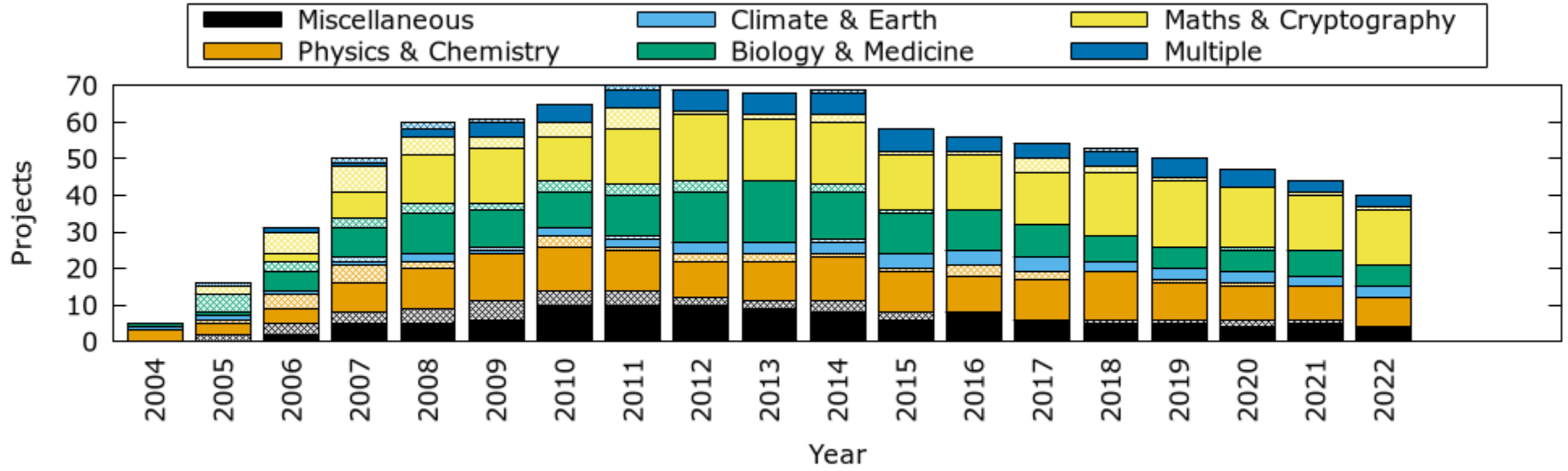
- BOINC 7.18 (Android only)
- Intel Core i 12th gen. (P+E cores)



2022

- BOINC 7.20

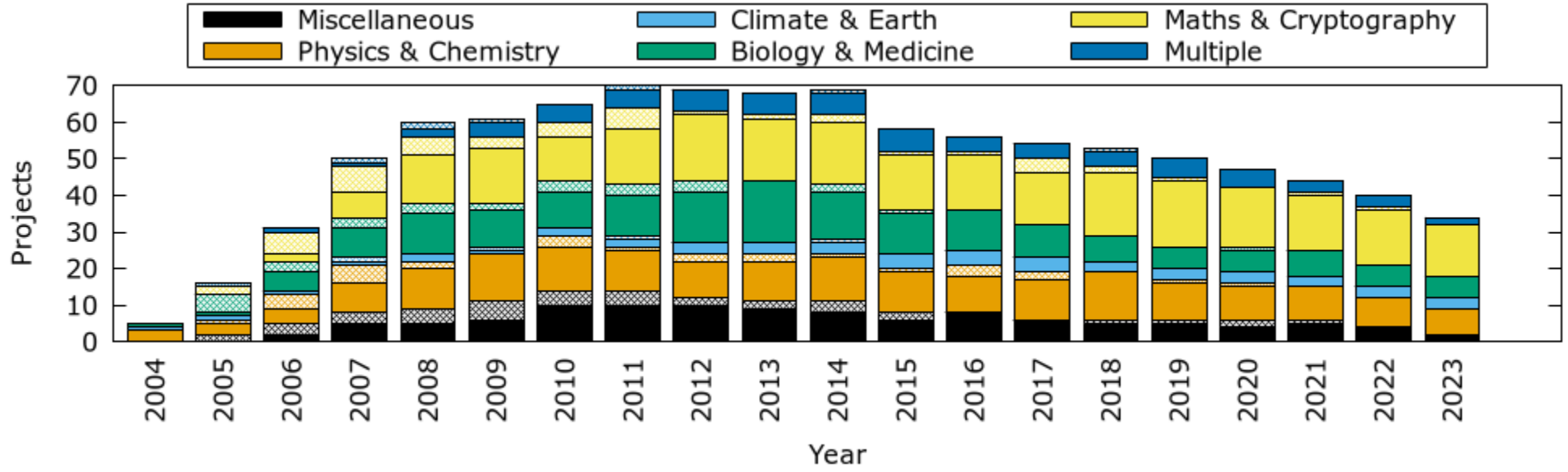
- AMD Ryzen 7000
- Apple M2
- NVIDIA GeForce RTX 4000
- AMD Radeon RX 7000
- Intel Arc



2023

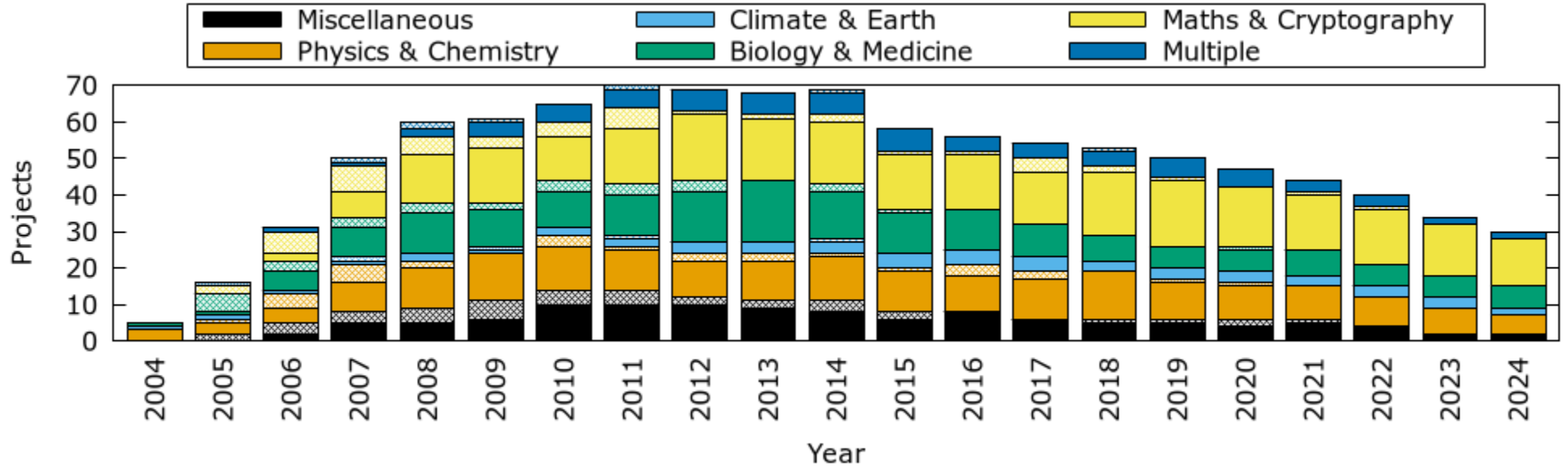
- BOINC 7.24

- Intel Core i 14th gen.
- Apple M3
- Raspberry Pi 5



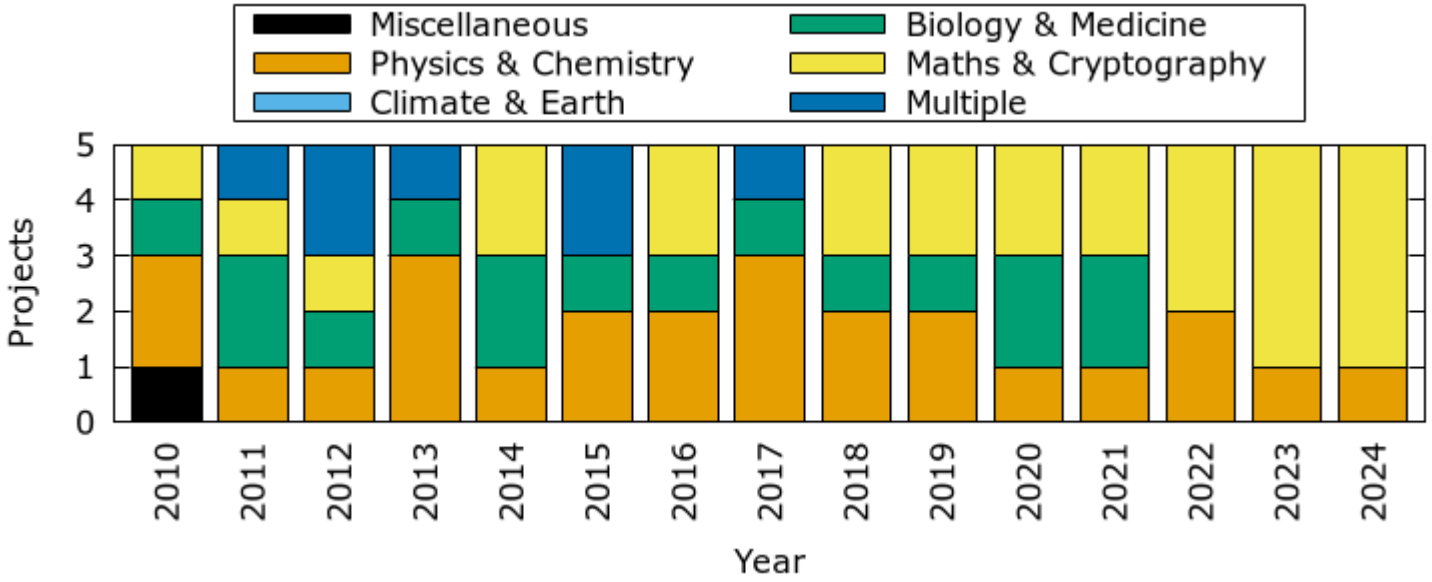
2024

- (BOINC 8.0)



Further observations & conclusions: BOINC Pentathlon

- even fewer options when task supply and server stability are taken into account
- a few more options when several subprojects are available



Project	#
Einstein@Home	8
Rosetta@home	7
World Community Grid	7
yoyo@home	7
PrimeGrid	7
NumberFields@home	5
Universe@Home	4
3 projects	3
5 projects	2
11 projects	1

Further observations & conclusions: general

- from single-core CPUs to complex high-count multicore CPUs and GPUs
  - more possibilities, also because more memory is available in general
  - higher complexity of both hardware and software, particularly for optimizing throughput and/or efficiency
- fewer projects because some old projects are abandoned and almost no new projects appear
  - the better times promised by some advocates of anonymization or monetarization did not materialize