CURRICULUM VITAE (CVA) of Sebastian Grinstein

CV date	14/01/2026

Part A. PERSONAL INFORMATION

First name	Sebastian		
Family name	Grinstein		
Gender	Male	Birth date	10/06/1972
NIE number	X8752352R		
Passport number	BT3521721	Nationality	Hungarian
e-mail	sgrinstein@ifae.es	https://www.icrea.cat/Web/ScientificStaff/sebastian-grinstein-461	
Open Researcher & Contributor ID (ORCID) (*)		orcid.org/0000-0002-6460-8694	

A.1. Current position

Position	ICREA Research Professor		
Initial date	15/10/2012		
Institution	Instituto de Física de Altas Energías (IFAE)		
Department/Center	IFAE Experimental Division		
Country	Spain	Teleph. number	+34 931702701
Key words	High energy physics, Radiation detection, Semiconductor detectors		

A.2. Previous positions (research activity, interruptions, art. 14.2.b)

Period	Position/Institution/Country/Interruption cause
15/10/2012-now	ICREA Research Professor/IFAE/Spain
01/09/2008-now	Professor Vinculat/Universidad Autonoma de Barcelona/Spain
01/09/2008-14/10/2012	ICREA Researcher/IFAE/Spain
2006-2008	Research Fellow/Harvard University/USA
2003-2006	Postdoctoral Fellow/ Harvard University/USA
1998-2003	Doctoral Student/Universidad de Buenos Aires/Argentina
1997-1998	STINT Fellow/ Royal Institute of Technology/Suecia

A.3. Education

Degree	University/Country	Year
PhD	Universidad de Buenos Aires (UBA)/Argentina	2003
M.Sc. (*Licentiate*)	Universidad de Buenos Aires (UBA)/Argentina	1997

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

I completed my PhD (2003, UBA) measuring the properties of quarks and gluons in high energy collisions at D0. Later I became a postdoctoral Fellow at Harvard where I worked mainly at the CDF experiment on top-quark physics and detector operations. In 2008 I joined the IFAE (Institut de Física d'Altes Energies) ATLAS experiment group as an ICREA Researcher. In 2012 I became an ICREA Research Professor.

My research has been focused on high-energy experimental particle physics: understanding which are the fundamental constituents of nature and how they interact. At Fermilab I performed studies of QCD and the properties of the heaviest quark, the top quark. At the LHC accelerator at CERN I conducted searches for new physics in the top sector. I have always been drawn to instrumentation R&D. Since 2010 I have been leading various

coordinated projects to develop new semiconductor detectors. As a result of these projects, 3D pixel silicon sensors designed and produced at Barcelona are included in the innermost detector layer of ATLAS and in the tracking system of the ATLAS Forward Proton detector.

My group is currently assembling pixel modules for the new tracker, set to be installed in 2029. To address the challenges of pile-up in the HL-LHC era, we are also developing silicon timing devices for the ATLAS High Granularity Timing Detector (HGTD). I have also led, and I am leading, medical projects, including the development of real-time breast biopsy machines based on CdTe sensors and the evaluation of silicon detectors for neuromonitoring applications.

I have authored more than 1500 refereed publications through my career, as a member of the WiZard/CAPRICE, DZero, CDF and ATLAS collaborations. I am also the author of more than 65 internal notes in the DZero, CDF and ATLAS experiments. The h-index of my research production is 277. I have directed, or co-directed 13 PhD theses (detailed below), several Master theses and TFGs.

Directed or co-directed PhD theses:

- **J. Carlotto,** "3D Silicon Sensors and Module Assembly for the ATLAS ITk Pixel Detector", PhD thesis co-director, UAB **2025**.
- **Y. Gan**, "MiniCACTUS-V2: A DMAPS Prototype for Timing in High Energy Physics Experiments", PhD thesis co-director, UAB **2025**.
- **V. Gautam,** "New Silicon Devices with Charge Multiplication for the ATLAS Upgrade and for Medical Applications**",** PhD thesis co-director, UAB **2024.**
- **C. Grieco**, "Low Gain Avalanche Detectors for the ATLAS High Granularity Timing Detector", PhD thesis co-director, Universitat Autonoma de Barcelona, (UAB) **2022**.
- **Tanya Wu**, "Design and Characterization of a MAPS for the CEPC Vertex Detector", PhD thesis co-director, Central China Normal University, CCNU and UAB, **2022**.
- **Maria Manna**, "Development of 3D sensors for the ATLAS HL-LHC pixel upgrade ", PhD co-director, UAB, **2021**.
- **Fabian Förster**, "Novel CMOS Devices for High Energy Physics and Medical Applications", PhD thesis co-director, Universitat Autonoma de Barcelona, **2020**.
- **David Vazquez Furelos**, "3D Pixel Sensors for the High Luminosity LHC ATLAS Detector Upgrade", PhD thesis director. Universitat Autonoma de Barcelona, **2019**.
- **Emanuele Cavallaro**, "Novel Silicon Detector Technologies for the HL-LHC ATLAS Upgrade", PhD thesis director. Universitat Autonoma de Barcelona, **2018**.
- **Ivan Lopez Paz**, "The one-armed ATLAS Forward Proton Detector", PhD thesis co-director. Universitat Autonoma de Barcelona, **2018**.
- **Shota Tsiskaridze**, "Search for flavor-changing neutral current top quark decays $t \rightarrow Hq$, with $H \rightarrow bb$, in pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector", thesis co-director. Universitat Autonoma de Barcelona, **2016**.
- **Estel Perez**, "First measurement of the Z+jets production cross section with the ATLAS experiment at the LHC". PhD thesis co-director. UAB, **2011**.
- **Carolina Deluca**, "Measurement of the Inclusive Isolated Prompt Photon Production Cross Section at the Tevatron". PhD thesis co-director. UAB, **2009**.

I am currently directing or co-directing five PhD students working on HEP instrumentation. I also teach an instrumentation Master course at the UAB.

Part C. RELEVANT MERITS

C.1. Publications

As mentioned above, I have authored more than 1500 refereed publications through my career. Below I list selected publications from the last years.

- Y. Gan, et al., “The First Test-Beam Results of MiniCACTUS-V2: An ASIC Prototype with 60 ps Time Resolution and a Fast Recovery Time”, JINST 20 C04013 (2025).
- V. Gautam, R. Casanova, S. Terzo and S. Grinstein, “Development of single photon avalanche detectors for NIR light detection”, JINST 17 C12019 (2022).
- T. Wu et al., “The TaichuPix1: a monolithic active pixel sensor with fast in-pixel readout electronics for the CEPC vertex detector”, JINST, 16, P09020 (2021).
- S. Terzo et al., “Novel 3D pixel sensors for the upgrade of the ATLAS Inner Tracker”, Front. Phys. 9 2021 page 2.
- M. Manna, et al., “First characterisation of 3D pixel detectors irradiated at extreme fluences”, NIM A Volume 979, 1 November 2020, 164458.
- M. Reichmann, et al., “New test beam results of 3D and pad detectors constructed with poly-crystalline CVD diamond”, NIM A Volume 958, 1 April 2020, 162675.
- S. Terzo, et al., “Characterisation of AMS H35 HV-CMOS monolithic active pixel sensor prototypes for HEP applications”, JINST 14, P02016 (2019).
- S. Terzo, et al., “Performance of Irradiated RD53A 3D Pixel Sensors”, JINST 14 no. 06, P06005 (2019).
- J. Lange, et al., “Radiation hardness of small-pitch 3D pixel sensors up to a fluence of 3e16 neq/cm2”, JINST 13, P09009, 2018.
- S. Terzo, et al., “Characterization of novel prototypes of monolithic HV-CMOS pixel detectors for high energy physics experiments”, JINST, 12, C06009 (2017).

C.2. Congress

This is a sub-set of invited instrumentation talks:

- S. Grinstein, “Overview of the Timing Detectors at ATLAS and CMS for the HL-LHC”, 20th Trento Workshop on Advanced Silicon Radiation Detectors, Trento, 5-8 Feb 2025.
- S. Grinstein, “Silicon Detectors for Current and Future Particle Physics Experiments”, Physics Department Colloquium, *Universidad de Buenos* Aires, 30 March 2023.
- S. Grinstein, “A High Granularity Timing Detector for the Phase-2 ATLAS Upgrade”, The 29th International Workshop on Vertex Detectors (Vertex 2020) Oct 5-7, 2020.
- S. Grinstein, "Pixel Sensor Technologies for the CEPC", International Workshop on High Energy Circular Electron Positron Collider, Beijing, China, 6-8 November 2017.

C.3. Research projects

Below I list the projects of which I am, or have been, involved at the coordination level:

- PID2024-158059NB-C31, “Detectors for the HL-LHC ATLAS upgrade and Beyond”, **PI: S. Grinstein.** Funding: 447500EUR. Dates: 01/09/2025-31/08/2028. MICIU (Spain).
- 2025 PROD 00251, “Add on Intelligence Spectral Photon Detector for Mammography”, Funding: 150000EUR, **PIs: S. Grinstein, M. Chmeissani,** GenCat, Dates: 2025-2027.
- AGAUR 2021 SGR 01506, “IFAE particle detectors and instrumentation group”, Funding: 40000EUR, **PI: S. Grinstein**. Dates: 01/01/2022 to 31/12/2024. AGAUR (GenCat).
- PDC2022-133120-C22, “3D MIcro Detectors for Flash Effect studies (MIDFE)-IFAE”, Funding: 46000EUR, coordinated project with IMB-CNM. **PI: S. Grinstein.** Dates: 01/12/2022-30/11/2024. MICINN (Spain).
- PID2021-124660OB-C21, “Detectors for the HL-LHC ATLAS upgrade”, Funding: 660000EUR, **Co-PI: S. Grinstein.** Dates: 01/09/2022-31/08/2025. MICINN (Spain).
- H2020-INFRAINNOV-2020-2 (GA no. 101004761), “Advancement and Innovation for Detectors at Accelerators (AIDAinnova)”, Funding: 98750EUR, **PI (for IFAE) and WP coordinator: S. Grinstein**. Dates: 01/04/2021-31/03/2025, EU – Horizon 2020.
- IGNITE (BIST) 2019 Award for "BIOSPAD", awarded in January 2020 to IFAE, ICFO and IMB-CNM. PIs: **S. Grinstein** (IFAE) and T Durduran (ICFO). Funding: 50000EUR.

- RTI2018-094906-B-C21, “Detector productions for the HL-LHC ATLAS upgrade”, Funding: 1246300EUR. Coordinated project with IMB-CNM. **PI: S. Grinstein**. Dates: 01/01/2019-31/12/2021. MINECO (Spain).
- IGNITE (BIST) 2018, for "BIOSPAD", awarded in March 2019 to IFAE and ICFO. Principal investigators: **S. Grinstein** (IFAE) and T Durduran (ICFO). Funding: 20000EUR.
- FPA2015-69260-C3-2-R, “Participation of IFAE in the LHC ATLAS experiment”: detector upgrade”, Funding: 544500EUR. Coordinated project with IMB-CNM. **PI: S. Grinstein**. Dates: 01/01/2016-31/12/2019. MINECO (Spain).
- COMRDI15-1-0022, “Biopsia 3D per tomosintesi (RIS3CAT)”, Funding: 271289EUR. Coordinated project. **PIs: M. Chmeissani and S. Grinstein**. Dates: 07/07/2016-40/04/2020. Generalitat de Catalunya – ACCIO.
- SEV-2016-0588, “Severo Ochoa excellence program”, guarantor. Funding: 4M EUR. Dates: 2017-2021.
- H2020-INFRAIA-2014-2015 (GA no. 654168), “Advanced European Infrastructures for Detectors at Accelerators, AIDA2020”, Funding: 61000EUR. **PI (for IFAE) and WP coordinator: S. Grinstein**. Dates: 01/05/2015-30/04/2020. EU – Horizon 2020.
- FPA2013-48308-C2-1-P, “DETECTORES DE PIXELS ACTUALES Y FUTUROS PARA EL EXPERIMENTO ATLAS”, Funding: 181500EUR (coordinated project). **PI: S. Grinstein**. Dates: 01/01/2014-30/06/2016. MINECO.
- AGAUR SGR 1177 2014, “Particle Detectors and Instrumentation group at IFAE”, Funding: 43200EUR, **PI: S. Grinstein**. Dates: 01/01/2014-30/04/2017. AGAUR (GenCat).

C.4. Contracts, technological or transfer merits

I am one of the four co-founders of BARETEK Barcelona Detector Technologies S.L., a spin-off company of IFAE, created in 2020. The company provides micro-electronics packaging and encapsulation solutions to research institutes and the private sector.

C.5 Leadership positions and other activities

Most recent ATLAS positions:
- HGTD Deputy Project Leader (2021 – 2025)
- HGTD Sensor co-convener (2020 – 2021)
- HGTD Module Assembly co-convener (2018 – now)
- Project Management Office sub-committee member for the Muon System (2021 – now)
- Member of the ITk Pixel coordinator team (2017 – 2020)
- ITk Pixel sensor group co-convener (2016 – 2019)
- Member of the institute boards for ATLAS ITk, ATLAS HGTD and RD50 (on-going)

IFAE/BIST activities:
- Member of the IFAE Advisory Board (2019 – 2023)
- Member of the BIST Research Committee (2018 – 2023)
- Guarantor (“Garante”) for the IFAE Severo-Ochoa 2016 excellence award

CDF positions (until 2008):
- Head of CDF detector operations
- Silicon sub-project leader and convener of the B-tagging group

Other:
- Referee for publications in Nuclear Instruments and Methods in Physics Research, A, Proceedings of Science (PoS), JINST and Frontiers
- Referee for funding programs in Europe (EU grant reviewer), Spain (ANEP), UK (STFC) and Argentina (ANPCYT).