

María T. Barrera

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SKILL SUMMARY:

- Strong leadership and management skills obtained from my volunteering experience at the University Support Group for Student Development as a Workshop Facilitator in the new students Initiation Journey.
- Efficient analysis and problem solving skills and a keen eye for detail developed from academic experiences, acquired through hands on experience on advisory for campus students and group theory workshop.
- Tolerant and flexible to different situations also able to adapt to any situation.
- Effective listening skills and capacity of change to improve productivity and personal development.
- Successful when working on projects independently or with others as a team, fostered through assignments and experience as a Workshop Facilitator and Researcher at the Simon Bolivar University Nuclear Physics Laboratory.
- Languages: Spanish (Native). English (Advanced writing and speaking). German (Advanced speaking and medium writing). French (Basic).

TECHNICAL SKILLS

- Microsoft Office: Excel, Word, PowerPoint.
- Advanced management software: nuclear tracks analysis, specifically: Morfolm.
- Advanced management software: Data Analysis and Graphing, specifically: OriginPro, Xmgrace.
- Advanced management software: Data Spectra Analysis, specifically: ADMCA.
- Advanced management software: Interactions in Matter, specifically: SRIM.
- Medium management software: Montecarlo Simulation, specifically: MCNPX.
- Proficient in programming languages such as: C++.
- Preparation and reading of passive nuclear track detectors CR-39. Measure of neutrons and alpha radiation doses.
- Nuclear Instrumentation, experimental set-up preparation and data acquisition with NIM systems, PM, Scintillators,

EDUCATION:

September 2007 – July 2008 **Wilhelm-Löhe-Schule** **Nürnberg, Germany.**
Cultural exchange student.

Sept 2008 – Present **Simon Bolivar University** **Caracas, Venezuela**
Candidate for Bachelor of Physics. Grade Act Date: November 2015

VOLUNTEERING EXPERIENCE:

Jan 2010 – July 2010 **Directive Member of Wayuu Ultimate Frisbee Group** (Simon Bolivar University)
Main Secretary Coordinate the communication between the group and other entities of the University.
Wrote the proceedings and distributed to all members. Handled all the relevant documents of the Group.

July 2010 – July 2011 **Member of Physics Student Center**
Main Secretary Coordinate the communication between the center and other entities of the University.
Lead a team of 5 people. Secured sponsors and speakers of the topics of interest, responsibility of all the issues between the University, the team and the sponsors such as document control (internal permits).

Sept 2008 – Present **Member of GADE-USB** (Spanish acronym for Support Group for Student Development Simon Bolivar University).
Organized 7 groups of new students' 2-day Initiation Journey. Each group was made of 20-40 students. Contributed on Advisory Courses for Campus Students and Group Theory Workshop, Workshop Facilitator, counseled campus students with academic concerns. Collaborated with Psychological Department of Simon Bolivar University.

March 2012 – Present **Member of Nuclear Physics Research Group and Laboratory** (Simon Bolivar University)
Researcher: Participate in research projects measuring neutrons and alpha radiation in Radiotherapy Centers and Ambient.
Collaborate with the maintenance of the Laboratory installations.

January 2011, 2013, 2014, 2015 Infocarreras (Simon Bolivar University) Scientific Exposition of the material in the Pure Physics Career Program. Demonstrations of physical principles.

WORK EXPERIENCE:

March 2010 – July **Support Teacher.**
Support Teacher of the Physics Department (Simon Bolivar University)

Feb 2012 – Present **Teacher at Sobresalgo Refuerzo Académico.**
Particular teenager's teacher

CONGRESS:

- **May 2012** X Venezuelan Society of Oncology Radiotherapy Conference, Caracas Venezuela
- **May 2012** IV Medical Physics and Nuclear Medicine Conference, Caracas, Venezuela.
- **April 2013** IX Latin American IRPA Regional Congress on Radiation Protection and Safety, Rio de Janeiro, Brazil.
- **April 2013** V Iberian and Latin American Congress of Radiological Protection Societies. Rio de Janeiro, Brazil.
- **April 2013** I Simon Bolivar University Laboratory Unity Scientific -Technical Congress. Caracas, Venezuela
- **October 2014** II Andean School on Nuclear Physics, Bogota, Colombia.
- **December 2014** VIII National Physics Congress, Tucacas, Venezuela.
- **March 2015** XI International Symposium on Radiation Physics, Ciudad Juarez, Mexico.
- **March 2015** I National Congress about Research and Technology of the Ionizing Radiation: Health, Environment and Industry, Caracas, Venezuela.

CURSES:

- **April 2013** Refreshing Course: Criteria to develop operational structure for decision-making in protective actions and response to a radiological or nuclear emergency, Rio de Janeiro, Brazil. (3h)
- **September 2013** Introduction to Nuclear Physics I, Universidad Simon Bolivar, Caracas, Venezuela (60h).
- **January 2014** Radiation interaction with matter, Universidad Simon Bolivar, Caracas, Venezuela (96h).
- **January 2015** Introduction to Nuclear Physics II, Universidad Simon Bolivar, Caracas, Venezuela (60h).
- **January 2015** Neutron Physics, Universidad Simón Bolívar, Caracas, Venezuela (60h).
- **May 2015** Introduction to MCNPX, Universidad Autónoma de Zacatecas, Zacatecas, México (40h).
- **April 2015** Transport of radiation in matter, Universidad Simón Bolívar, Caracas, Venezuela (60h).

SCIENTIFIC PROJECTS:

- E. Díaz, J. Dávila, L. Sajo-Bohus, L. Spencer, H. Barro, D. Palacios, M. Barrera, V. García. H. Figuera, R. Castillo "Estudio del campo neutrónico en el bunker, inducido por un acelerador lineal de 10-20 MV en sala de Radioterapia". Collaborator. Presented at: I Venezuelan Congress of Science Technology and Innovation Sept 2012 Oral Presentation, The IX Latin American IRPA Regional Congress on Radiation Protection and Safety Rio de Janeiro, Brazil April 2013, Poster. I Simon Bolivar University Laboratory Unity Scientific -Technical Congress 2013, Poster.
- W. Gonzalez, G. Espinosa, M. Zuin, G. Viesti, F.Pino, J. Golzarri, E. Martines, J. Bermudez, D. Moro, J.K. Palfalvi, M. Barrera and L. Sajo-Bohus "PADC Detected External Neutron Field by Nuclear Tracks at RFX-mod" Presented in the II Andean School on Nuclear Physics, Poster. Presented at: II Andean School on Nuclear Physics, Bogota, Colombia.

- M. Barrera, H. Barros, F. Pino, J. Dávila, E. Salcedo L. Sajo-Bohus “Thermal and Epithermal Neutron Fluence Rate Gradient Measurements by PADC Detectors in LINAC radiotherapy treatments-field”. Presented at: XI Symposium on Radiation Physics, March 2015 Ciudad Juarez, Mexico, I National Congress about Research and Technology of the Ionizing Radiation: Health, Environment and Industry, March 2015 Caracas, Venezuela. Principal Author.
- L. Sajo-Bohus, E. Greaves, M. Barrera, J. Davila, H. Barros, F. Pino and F. Farina. “Th and U Fuel Photofission Study by NTD for AD-MSR subcritical assembly”. Presented at: XI Symposium on Radiation Physics, March 2015 Ciudad Juarez, Mexico.
- *R. Martín-Landrove, J. Dávila, Hector Rene Vega-Carrillo, M. T. Barrera, A.J. Kreiner, Felix Pino, Haydn Barros, Eduardo D. Greaves and L. Sajo-Bohus* “GDR (γ ,n) Reaction in Radiotherapy Treatment-Fields with 18 MV Linear Accelerators” Presented in the 14th International Conference on Nuclear Reaction Mechanisms June 2015, Varenna, Italy