Template for Evidence(s)
UI GreenMetric Questionnaire

University : Cruzeiro do Sul University
Country : Brasil
Web Address : www.cruzeirodosul.edu.br
Program link: https://ucs.digital/2022/11/01/odontologia/

ODONTOLOGY PROGRAM

1. The Program is related to sustainable development goals. Describe how the program works with this perspective.

The Graduate Program in Dentistry at Universidade Cruzeiro do Sul plays a central and documented role in supporting Sustainable Development Goal (SDG) 3, focused on "Health and Well-being." Work in this perspective occurs through the direct translation of research into public policy and social inclusion. Practical examples of the program's actions include:

- SUS and Public Policy Support: Generation of clinical evidence for dentin hypersensitivity management protocols in the SUS Primary Care in Sorocaba-SP, and the application of the EVO-BR tool to 1,753 SUS users across Brazil to foster equitable oral health public policies.
- Protection of Vulnerable Populations: Mapping the profile of violence against People with Disabilities (PwD) in Suzano-SP, training health professionals to report maltreatment and strengthen protection networks.
- Prevention and Youth Health: Generation of evidence on the impact of electronic cigarette use (associated with worse periodontal outcomes) focused on prevention for young and university audiences, including the creation of awareness brochures.
- Innovation and Sustainability: The program drives innovation for health sustainability by validating natural alternatives, such as the use of *Lippia sidoides* essential oil (OELS), an antimicrobial agent that helps mitigate the global problem of antibiotic resistance.
- Health Education: Training 333 early childhood education teachers in Franco da Rocha (SP) on dental trauma, immediately transferring scientific knowledge to public basic education.

2. The Graduate Program in Dentistry at Universidade Cruzeiro do Sul offers courses with a strong focus on monitoring technological evolution and the democratization of science (both essential for educational and health sustainability), highlighting courses such as "Digital Content Production" and "Science Communication in Dentistry," in addition to a mandatory English-language course in the Doctoral program.

The program operates through a transversal dynamic structured around two main research lines: Dentistry in Childhood, Adolescence, and for People with Disabilities and Clinical and Laboratory Dentistry: Prevention, Diagnosis, and Treatment.

This transversal perspective is put into practice through the integration of technological

development (bench/laboratory research) and direct social application, uniting educational innovation, health, and technology. This is achieved through the use of Augmented Reality to directly guide hundreds of families on oral health, and through the use of Artificial Intelligence (AI) and Radiomics (texture and image) to enhance complex diagnoses, such as oropharyngeal carcinomas and periapical lesions. This approach reflects patient-centered research, allowing innovation to be transversal across different areas and culminating in health improvements.

3. In the areas of innovation and research linked to global health (SDG 3) and cutting-edge internationalization during the recently evaluated period, the following stand out:

Scholarships (3 years)

- Master's: R$ 135,600
- Doctorate: R$ 601,200
- CNPq Bench Fee: R$ 17,020
- FAPESP TT-1 Scholarship: R$ 21,235
- FAPESP Scientific Initiation (IC): R$ 19,903 Approximate total in scholarships: R$ 795,000

Project Funding

- Grants and research projects: approximately R$ 400,000

Sandwich Doctorate and Internationalization

- Sandwich Doctorate: approximately € 27,000
- International partnerships/projects: approximately US$ 21,000

Consolidated Result (Last 3 Years)

- National resources: approximately R$ 1.2 million (R$ 795,000 in scholarships + R$ 400,000 in projects)
- International resources: approximately € 27,000 + US$ 21,000

Thus, over the last three years, the PPGO has secured approximately R$ 1.2 million in scholarships and research funds, in addition to about € 27,000 and US$ 21,000 from internationalization and scientific cooperation efforts.

4. Below are 15 publications from 2025::

1. Lopes, D.L.G.; et al. (2025). Radiomics-Driven CBCT Texture Analysis as a Novel Biosensor for Quantifying Periapical Bone Healing. *Biosensors*, 15, 98. https://doi.org/10.3390/bios15020098
2. Alan, A.; et al. (2025). Evaluation of Respiratory Conditions in Individuals Undergoing Rapid Maxillary Expansion: A Computational Fluid Dynamics Study. *Diagnostics*, 15, 527. https://doi.org/10.3390/diagnostics15050527
3. Moraes, M.B.; et al. (2025). Unveiling Degenerative Bone Changes in the Condyle: A Texture

Analysis Approach Using Cone-Beam Computed Tomography. *Acta Cir. Bras.*, 40 https://doi.org/10.1590/acb401325

4. Salomão, G.V.S.; et al. (2025). Dental Implants in Patients with End-Stage Renal Disease: A Case Series. *Spec. Care Dent.*, 45, xx.https://doi.org/10.1111/scd.70014
5. Orhan, K.; Costa, A.L.F.; De Castro Lopes, S.L.P. (2025). Advancements in Artificial Intelligence for Dentomaxillofacial Radiology. *Diagnostics*, 15, 1222. https://doi: 10.3390/diagnostics15101222.

c. Nahás, A.C.R.; et al. (2025). Improving TMJ MRI Diagnostics in Juvenile Idiopathic Arthritis. *Oral Radiol* https://doi: *10.1007/s11282-025-00832-3*

7. Negrete, D.; et al. (2025). Artificial Intelligence and Dentomaxillofacial Radiology Education: Innovations and Perspectives. *Dent. J.*, 13, 245. https://doi.org/10.3390/dj13060245
8. De Oliveira, V.G.B.; et al. (2025). Voxel Size and Field of View Influence on Periodontal Bone Assessment Using Four CBCT Systems. *Tomography*, 11, 74. https://doi.org/10.3390/tomography11070074
9. De Oliveira, L.A.P.; et al. (2025). CT Texture Patterns Reflect HPV Status but Not Histological Differentiation in Oropharyngeal Squamous Cell Carcinoma. *Cancers*, 17, 2317. https://doi.org/10.3390/cancers17142317
10. De Oliveira, V.G.B.; et al. (2025). Cone Beam Computed Tomography Analysis of the Relationship between Chewing Side Preference and Temporomandibular Joint Disorders. *Oral Radiol.*, https://doi.org/10.1007/s11282-025-00852-z
11. Fuziama, C.D.H.; et al. (2025). Head and Neck Radiotherapy and Dentomaxillofacial Diagnostic Imaging: Biological Interactions and Protective Approaches. *Biomedicines*, 13, 3046. https://doi.org/10.3390/biomedicines13123046
12. Flaiban, E.; et al. (2025). Radiomics in Action: Multimodal Synergies for Imaging Biomarkers. *Bioengineering*, 12, 1139. https://doi.org/10.3390/bioengineering12111139
13. Pascareli-Carlos, A. M.; et al. (2025). Management strategies for posterior deciduous and permanent teeth with developmental defects of enamel..... *Evidence-Based Dentistry*, p. 1-10.
14. Ortegozo, G. A. L.; et al. (2025). Dental Students' Knowledge of the Differential Diagnosis of Developmental Defects of Enamel (DDE). *Arquivos em Odontologia (UFMG)*, v. 61, p. 200-212.
15. Souza, L. A. de; et al. (2025). Impacção Dentária do Tipo 'Kissing Teeth': Relato de Caso Clínico de Pré-Molar. *Foco*, v. 18, p. e10819.

5. Events:

On November 29, 2025, we were greatly pleased to host the I Integration Meeting of the Graduate Programs in Dentistry of Cruzeiro do Sul Educacional. This online event brought together the PPGOs from Universidade Cruzeiro do Sul and Universidade Positivo to celebrate research, partnership, and scientific development.

The opening ceremony featured distinguished guests: Prof. Dr. Kátia Jorge Ciuffi – Pro-Rector of Graduate Studies and Research; Prof. Dr. Carla Castiglia Gonzaga – Coordinator of the PPGO at Universidade Positivo; and Prof. Dr. Renata de Oliveira Guaré – Coordinator of the PPGO at Universidade Cruzeiro do Sul.

Throughout the morning, Master's and Doctoral students from both universities presented highly relevant research in oral health, child development, psychosocial factors, bruxism, aesthetics, periodontal inflammation, and more—showcasing the strength and diversity of scientific production within our institutions. We congratulate all presenters, advisors, and teams involved for their excellence, dedication, and commitment to building knowledge.

This meeting symbolizes the importance of inter-institutional integration, the exchange of knowledge, and the formation of a solid research network capable of transforming realities and boosting Brazilian Dentistry.

On December 16, 2025, 20 Stricto Sensu Graduate Programs participated in the I Annual Self-Assessment Meeting, a space for strategic reflection, qualified listening, and strengthening academic excellence. Self-assessment, recognized by CAPES as a pillar of continuous improvement, allows for the identification of advances, challenges, and opportunities, guiding academic planning, research, and human resource training, with a direct impact on Program evaluations. The Vice-President of Academic Excellence of the Cruzeiro do Sul Educacional Group (CSED), Prof. Dr. Beatriz Maria Eckert Hoff, highlighted self-assessment as a strategic academic management practice, encouraging Programs to "look inward" with responsibility and commitment to quality.

The meeting saw active participation from the focal points of the group's institutions: Universidade Cruzeiro do Sul (UNICSUL), Universidade Cidade de São Paulo (UNICID), Universidade de Franca (UNIFRAN), Universidade Positivo (UP), Centro Universitário UDF, and Centro Universitário Campus João Pessoa (UNIPÊ), strengthening integration, the exchange of experiences, and collective construction among the different units. We congratulate the Pro-Rector of Graduate Studies at CSED, Prof. Dr. Kátia Jorge Ciuffi, for the organization and leadership of this meeting.

7. Impact of Education and Research Programs in support of Sustainable Development Goals

The Graduate Program in Dentistry has a massive socioeconomic and public health impact, acting as a strong local and national driver for SDG 3 (Health and Well-being). The impact is transversal and manifests in the following strategic areas:

- Direct Transformation of the SUS and National Public Policies: The program transcends academic research by generating applied scientific subsidies. Highlights include the application of the EVO-BR tool to 1,753 users across Brazil's five regions to support equitable oral health policies nationwide. Regionally, the program provided direct professional qualification for SUS Primary Care dentists in Sorocaba-SP for managing dentin hypersensitivity and generated evidence optimizing maternal-infant health (frenotomy for breastfeeding improvement) in the public sector.
- Inclusion, Protection, and Care for People with Disabilities (PwD): The program is a benchmark with a history of awards in actions for patients with special needs. As a direct social impact aligned with the Health and Well-being SDG, researchers mapped the profile of violence against PwD in Suzano-SP, training protection network

professionals to report maltreatment and guiding prevention policies.

- Transformative Education and Preventive Innovation: The program actively transfers knowledge to basic education and the community. Researchers trained 333 early childhood education teachers in Franco da Rocha-SP on dental trauma management and utilized technological innovations like Augmented Reality to educate over 140 families on oral hygiene. Additionally, the program generated awareness brochures and evidence on periodontal damage linked to electronic cigarette use, directly targeting prevention among university youth.
- Sustainability and Biotechnology in Health: Contributing to the global control of antimicrobial resistance, the PPGO validated more sustainable alternatives, such as the essential oil from the *Lippia sidoides* plant, proving to be a natural and safe agent in combating bacteria linked to Infective Endocarditis.
- Socioeconomic Development and "Enucleation": The training offered by the program produces graduates with high employability and income growth. The leadership of these masters and doctors in higher education institutions, health secretariats, and the formulation of national guides ensures the decentralization of knowledge ("enucleation"). According to institutional reports, by focusing on health innovations and quality of life improvements, the research generates indirect economic benefits for the country, reducing long-term social costs associated with chronic oral diseases.