
ALEJANDRO RODRIGO GUTIÉRREZ TREJO

<https://alejandrorodrigo86.github.io/Web/>

PROFILE

Professional with more than **10 years of experience in basic and applied research. Ph.D. Candidate and Master's in Behavioral Sciences: Experimental Analysis of Behavior.** My research focuses on studying the **cognitive mechanisms** involved in the **spatial navigation and orientation** of vertebrates. **Founding Partner**, and **Chief Operating and Commercial Officer** of the company **Walden Modular Equipment**. The company's objective is to develop personalized experimental laboratory equipment used mainly in areas related to the study of behavior.

DEGREES

Doctoral Degree in Experimental Analysis of Behavior (August 2017 - Present)

University of Guadalajara, Center of Studies and Research in Behavioral Sciences – Guadalajara, Jalisco (Mexico).

Thesis project: "Computation of multiple landmarks in humans."

- Director: Dr. Jonathan Buriticá Buriticá. Laboratory of Learning and Comparative Cognition, Center of Studies and Research in Behavioral Sciences, University of Guadalajara.
- Supervisor: Dr. Debbie M. Kelly. Comparative Cognition and Cognitive Biology Laboratory, Department of Psychology, University of Manitoba.

Master's Degree in Experimental Analysis of Behavior (January 2014 – July 2017)

University of Guadalajara, Center of Studies and Research in Behavioral Sciences – Guadalajara, Jalisco (Mexico).

Thesis: "Effect of Environmental Enrichment on Successive Negative Operating Contrast." July 03, 2017.

- Director: Dr. Carlos de Jesus Torres Ceja. Laboratory of Behavioral Processes and Animal Models, Center of Studies and Research in Behavioral Sciences, University of Guadalajara.
- Codirector: Dr. Carlos Javier Flores Aguirre. Laboratory of Behavioral Processes and Animal Models, Center of Studies and Research in Behavioral Sciences, University of Guadalajara.

Bachelor of Veterinary Medicine and Animal Husbandry (May 2005 – September 2012)

Autonomous Metropolitan University campus Xochimilco – Mexico City, CDMX (Mexico).

Report: "Environmental Enrichment and Behavioral Management Program in Asian elephants (*Elephas maximus*) at the Africam Safari zoo." September 2012.

- Director: Dr. José Antonio Martínez García. Department of Agricultural and Animal Production, Autonomous Metropolitan University.
- Codirector: BVSc Gerardo Martinez del Castillo. Animal Welfare Department, Africam Safari Zoo.

WORK EXPERIENCE

Founding partner and Chief Operating and Commercial Officer (September 2018 – Present)

Walden Modular Equipment – Guadalajara, Jalisco (Mexico).

Main duties:

- Overseeing day-to-day administrative and operational functions of the company.
- Coordination of the development, production, marketing, and finance departments' actions.
- Ensure the company complies with local laws and regulations.
- Manage and expand the client portfolio.
- Supervision and improvement of customer service and satisfaction guidelines.
- Control of future investments and purchases.

Online Module Lecturer (August 2022 & July 2020)

Latin American Center for Studies in Biological Sciences and Animal Health – Pachuca, Hidalgo (Mexico).

Course concerning "The study of animal behavior" taught at the "Certified Course on Behavioral Management of Wildlife under Human Care."

Online Module Lecturer (July 2022)

Veterinary and Ecology Institute – Puebla, Puebla (Mexico).

Courses about the "S.P.I.D.E.R. Model" and the "Evaluation of the environmental enrichment program" taught at the seminar "New Trends in the Environmental Enrichment of Wildlife."

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Online Module Lecturer (June 2021)

Zoological Foundation of Ecuador – Quito, Ecuador (Ecuador).

Course concerning the "Documentation and evaluation of zoo training programs" taught at the "Ex-Situ Wildlife Behavior, Enrichment, and Training Principles Seminar."

Online Module Lecturer (January 2021)

Veterinary and Ecology Institute – Puebla, Puebla (Mexico).

Course concerning the "Evaluation of the environmental enrichment program" taught at "1st Workshop on Environmental Enrichment in Wild Fauna (Theoretical – Online)."

Online Module Lecturer (July 2020)

FaunaVet-Peru – Lima, Perú (Perú).

Course concerning the "Observation and analysis of animal behavior" taught at "Online course: Welfare in wild animals' ex-situ."

Call Center Coach (January 2016 – January 2017)

Beliveo – Guadalajara, Jalisco (Mexico).

Veterinarian (November 2012 – November 2013)

South Veterinary Clinic – Mexico City, CDMX (Mexico).

External Consultant (April 2013)

Animal Welfare Department, Zacango Zoo – Toluca, State of Mexico (Mexico).

Coordinator (July 2011 – April 2013)

Animal Welfare Department, Africam Safari Zoo – Puebla, Puebla (Mexico).

Main duties:

- Coordination of undergraduate students and volunteers involved in the environmental enrichment program.
- Scheduling day-to-day activities of the program.
- Overseeing electronic documentation and reports on environmental enrichment and animal training programs.
- Review of safety protocols based on institutional guidelines to provide and improve the well-being of animals.
- Provision of expertise about the biology of species to media and zoo guests.

AWARDS & SCHOLARSHIPS

Humane Society International (HSI) Student Travel Award (June 2021)

Humane Society International

Award to cover the registration costs to attend the International Society for Applied Ethology 2021 congress.

Kuczaj Memorial Travel Grant (October 2018)

National Marine Mammal Foundation

Grant to cover the conference fees at the XIX Biennial Meeting of the International Society for Comparative Psychology.

Scholarship (September 2017 – September 28, 2020)

National Council of Science and Technology (Mexico)

Awarded to carry out my Ph.D. studies (Call 291236 CVU 592580).

Scholarship (May 2015 – November 2019)

National Council of Science and Technology (Mexico)

Awarded to carry out a research stay abroad (Call 291276 CVU 592580).

Scholarship (January 2014 – January 2016)

National Council of Science and Technology (Mexico)

Awarded to carry out my master's studies (Call 290840 CVU 592580).

Scholarship (February 2015 – March 2015)

National Council of Science and Technology (Mexico)
Awarded to carry out a research stay abroad (Call 290936 CVU 592580).

Scholarship (November 2011)

Jacksonville Zoo & Gardens New World Conservation Training Scholarship in collaboration with the Zoo Conservation Outreach Group

Full-funded scholarship awarded to attend the professional training program course: "Principles of Program Animal Management" of the Association of Zoos and Aquariums (AZA)

PUBLICATIONS

Journal article

Harvie, H., **Rodrigo, A.**, Briggs, C., Thiessen, S. & Kelly, D.M. (2021). Does stress run through the leash? An examination of stress transmission between owners and dogs during a walk. *Animal Cognition*, 24, 239–250 (2021). <https://doi.org/10.1007/s10071-020-01460-6>

Contribution Role:

- Software: Programming and implementing R code to tidy, order, manipulate, and analyze data.
- Formal Analysis: Application of linear regression and Generalized Linear Mixed Models (GLMM) analysis.
- Investigation: Assist in the data collection process.
- Writing – original draft: Preparation of the published work, specifically writing the subsection Data analysis and the Results section of the initial draft.
- Visualization: Programming and implementing R code to visualize and present data.

Journal article

Mejía, D., **Rodrigo, A.**, Avila-Chauvet, L., & Bonin, L. (2021). Drug use as a coping style to social isolation by COVID-19 pandemic and its effects on the adherence to safety guidelines in Mexico. *Revista Internacional de Investigación en Adicciones*, 7(1), 25-32. <https://doi.org/10.28931/riiad.2021.1.04>

Contribution Role:

- Conceptualization: Assessment formulation to evaluate the effects of lockdown on drug use.
- Methodology: Design of the model using a cross-sectional design and a snowball sampling strategy.
- Software: Plan, design, and creation of online assessments using Google Forms.
- Investigation: In charge of collecting data using social media marketing to recruit participants across Mexico (n = 475).
- Writing - Original Draft: Translation of the manuscript from Spanish to English.

Pre-publication

Rodrigo, A.; Avila-Chauvet, L; Buriticá, J. (bioRxiv, 2021): Daily Patterns of Foraging and Aggressive Behaviors in Great-tailed Grackle (*Quiscalus mexicanus*) at an Urban Patch with Availability or Absence of Resources. *bioRxiv*: 1-28.

Contribution Role:

- Conceptualization: Formulated the research question regarding how Grackles allocate their behaviors around an urban food patch across 25 days to determine if the presence or absence of garbage collection changes the feeding strategy of the birds.
- Methodology: Design of a continuous sampling method (n = 194 hours of video).
- Software: Undergraduate training to code behavioral data using Open-Source Software (OSS) BORIS. Data analysis using R and R Studio.
- Formal Analysis: Application of GLMM analysis.
- Investigation: In charge of data collection.
- Resources: Provision of instrumentation to conduct field recordings.
- Writing – original draft: Preparation and creation of the pre-print manuscript.
- Visualization: Programming and implementation of the R code to visualize and present data.
- Supervision: Oversight and leadership responsibility for the research activity planning and execution.
- Project administration: Management and coordination responsibility for the research activity planning and execution.

CONFERENCE PUBLICATIONS

Long abstract

Barrón-Cruz, E., Avila-Chauvet, L., **Rodrigo, A.** & García-Leal, O. (2016). Sub-optimal choice in rats and the influence of environmental enrichment on choice tasks. In Padilla, M.A (Ed.), *Research in Basic and Applied Psychology: Advances and Perspectives* (pp.16-22). Mexico: Autonomous University of San Luis Potosi. *Research in Basic and Applied Psychology: Advances and Prospects*: Mexico: UASLP.

Contribution Role:

- Conceptualization: Formulated the research question regarding how environmental enrichment could influence suboptimal choice in Wistar rats.
- Writing – original draft: Edition of all the subjects around environmental enrichment of the initial and published work.

THESIS/DISSERTATION

Master's Thesis

Rodrigo, A. (July 2017) **Effects of environmental enrichment in the negative successive operant contrast.** Center for Studies and Research in Behavior, University of Guadalajara. DOI 10.13140 / RG.2.2.14830.92487.

Contribution Role:

- Conceptualization: Formulated the research question regarding how different developmental experiences (i.e., housing conditions) affect the rat's intrinsic reward value (i.e., sugar water) during a devaluation operant task.
- Methodology: Application of an A-B-A-B design.
- Software: Designing and programming the experimental conditions in MED-PC IV.
- Formal Analysis: Application of statistical analysis using SPSS.
- Investigation: In charge of conducting animal research, care, and maintenance, daily examination, and testing of laboratory equipment, and data collection.
- Resources: Creation and assembly of personalized design housing conditions for rodents.
- Writing – original draft: Development and creation of the thesis manuscript.
- Visualization: Design and creation of graph visualization using Sigma Plot.

Report

Zenith. I. & **Rodrigo, A.** (September 2012) **Environmental enrichment and behavioral management program in Asian elephants (*Elephas maximus*) at Africam Safari Zoo.** Autonomous Metropolitan University campus Xochimilco.

Contribution Role:

- Conceptualization: Formulated the research question regarding the response preference to six types of environmental enrichment in Asian elephants (*Elephas maximus*) in captivity.
- Methodology: 1/0 Ad-libitum sampling Investigation: In charge of conducting animal observations at the zoo. Creation, development, and implementation of environmental enrichment for elephants. Daily elephant care and data collection.
- Writing – original draft: Development and creation of the thesis manuscript.

CREDENTIALS

Certificate of Completion (October 2020)

Biological Bases of Behavior Course, Autonomous University of Tlaxcala (Mexico)
A course on the evolution of animal behavior's cognitive and neurobiological aspects.

Professional license #12088262 (September 2020)

Secretariat of Public Education

A certificate with patent effects to practice Behavioral Science professionally relative to the exercise of the professions of Mexico City and its regulations

Certificate of Completion (June 2019)

Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018), Social Sciences and Humanities Research Council of Canada (SSHRC)

A course promoting the ethical conduct of research involving human participants.

Certificate of Completion (April 2019)

Animal User Training Course: Wildlife & Behavioural Sciences, Laboratory, University of Manitoba

A course about ensuring the adequate care and use of animals in research, teaching, and testing at the University of Manitoba.

Certificate of Completion (February 2019)

Ecophysiology of Animal Behavior Course, Autonomous University of Tlaxcala (Mexico)

A course about the ecological and evolutionary causes and consequences of variation in behavioral traits among individuals.

Certificate of Completion (August 2018)

R101, IBM Cognitive Class

A course about the basics of R—a programming language for statistical computing and graphics.

Professional license # 8111704 (May 2013)

Secretariat of Public Education

A certificate with patent effects to practice Veterinary Medicine professionally relative to the exercise of the professions of Mexico City and its regulations

ACADEMIC STAYS

Research stay (October 2020 – December 2020)

African Elephant Department, Africam Safari Zoo – Puebla, Puebla (Mexico).

Collaborator: BVSc Gerardo Martinez del Castillo

Research stay (May 2019 – November 2019)

Comparative Cognition and Cognitive Biology Laboratory, University of Manitoba – Winnipeg, Manitoba (Canada).

Supervisor: Dr. Debbie M. Kelly

Research visit (February 2019)

Animal Welfare Department, Zacango Zoo – Toluca, State of Mexico (Mexico).

Collaborator: BVSc Carlos Gómez Medina

Research stay (February 2015 - March 2015)

Animal Behavior Laboratory, Konrad Lorenz University Foundation – Bogotá, Colombia (Colombia).

Supervisor: Dr. Javier Leonardo Rico Rodriguez.

INVITED LECTURES

The role of behavioral ecology in conservation (May 2022)

Cycle of Conferences for the Dissemination of Science of the Academy of Processes and Dynamics in Psychology. Center for Health Sciences, University of Guadalajara – Guadalajara, Jalisco (Mexico).

Prototype phase I - Walden - modular equipment (November 2017)

Reto Zapopan – Guadalajara, Jalisco (Mexico).

Environmental enrichment today, from the zoo to the laboratory (February 2015)

National Institute of Health – Bogotá, Colombia (Colombia).

Environmental Enrichment and its effects on Behavior (January 2015)

Autonomous Metropolitan University campus Iztapalapa – Mexico City, CDMX (Mexico).

Ambassador animal program to promote zoo education (March 2012)

Conferences on Medicine and Wildlife Management. Autonomous Metropolitan University campus Xochimilco – Mexico City, CDMX (Mexico).

Managing the volunteer program at the zoo (March 2012)

PRESENTATIONS

Oral Presentations

Rodrigo, A. & Fernández-Sordo, G. (July 2020). Reversal of environmental conditions in adult Wistar rats. 2020 Virtual ABS Conference, Animal Behavior Society

Rodrigo, A., Longán, A., & Gómez-Medina, C. (July 2020). Evaluation of Zoo Animal Training Programs. 2020 Virtual ABS Conference, Animal Behavior Society.

Rodrigo, A., Sordo, G., & Torres, C. (September 2015). Effect of Environmental Enrichment in different periods of development. XXV Mexican Congress of Behavior Analysis. University of Veracruz – Xalapa, Veracruz (Mexico).

Rodrigo, A., Rico-Rodriguez, J. L., Moreno, M., & Cardona, A. (September 2015). Effect of Environmental Enrichment on the performance of rats in an IF60s reinforcement program. XXV Mexican Congress of Behavior Analysis. University of Veracruz – Xalapa, Veracruz (Mexico).

Rodrigo, A., Gonzalez, I., & Martinez, G. (September 2009). Environmental Enrichment in Asian Elephants (*Elephas maximus*). 1st Theoretical Practical International Congress of Clinical and Behavioral Management in Zoo Animals. University Antonio Nariño – Bogota, Colombia (Colombia).

Rodrigo, A. (August 2009) Environmental enrichment in green macaw (*Ara militaris*). XXVI Symposium on Wild Fauna. FMVZ. National Autonomous University of Mexico – Mexico City, CDMX (Mexico).

Poster Presentations

Rodrigo, A., Avila-Chauvet, L., Esparza, C., Moreno, J., & Ojeda, Y. (June 2021) Walden Operant Fish Tank: Automated equipment to assess positive fish welfare. 54th International Congress of the International Society for Applied Ethology (ISAE) – Bangalore, Karnataka (India).

Harvie, H., Rodrigo, A., & Kelly, D.M. (Marzo 2020). Pigeon's reliance on Landmarks vs. Geometric Cues in Novel Environment. Researchpalooza 2020. University of Manitoba – Winnipeg, Manitoba (Canada).

Rodrigo, A., Molina, J., Hernández, V., Soto, J., Miramontes, C., & Buriticá, J. (November 2018). Strategies to locate a goal using landmarks in a virtual environment. First forum of basic psychological research. Center for Health Sciences, University of Guadalajara – Guadalajara, Jalisco (Mexico).

Rodrigo, A., Corona, S., Estrada, A., & Buriticá, J. (November 2018). Computation of multiple landmarks to locate reinforcement area in Wistar rats. First forum of basic psychological research. Center for Health Sciences, University of Guadalajara – Guadalajara, Jalisco (Mexico).

Rodrigo, A., Eudave Patiño, M., Serna, N., Lara, E., Avila-Chauvet, L., & Buriticá, J. (October 2018). Time patterns of foraging behavior in Great-tailed grackle (*Quiscalus mexicanus*) at an urban patch. XIX Biennial Meeting of the International Society for Comparative Psychology. University of California Los Angeles – Los Angeles, California (USA).

Rodrigo, A., Buriticá, J., & Avila-Chauvet, L. (April 2018) Can humans use local landmarks in a virtual environment? 25th Annual International Conference on Comparative Cognition – Melbourne Beach, Florida (USA).

Rodrigo, A., Avila-Chauvet, L., Moreno, J.N., & Ojeda, Y. (April 2018) Walden - a new way to make behavioral research at the laboratory. 25th Annual International Conference on Comparative Cognition – Melbourne Beach, Florida (USA).

Rodrigo, A., Buriticá, J., & Avila-Chauvet, L. (November 2017) Use of landmarks to locate a goal in a virtual environment. VI International Seminar on Behavior and Applications. University of Tlaxcala– Tlaxcala, Tlaxcala (Mexico).

Rodrigo, A., Sordo, G., & Torres, C. (November 2014). Behavioral changes in laboratory rats produced by environmental enrichment. XXIV Mexican Congress of Behavior Analysis. Jesuit University of Guadalajara (ITESO) – Guadalajara, Jalisco (Mexico).

Rodrigo, A., & Torres, C. (November 2014). **Effects of the duration of the signal and the type of shaping in the adjustment of behavior in temporarily defined programs.** XXIV Mexican Congress of Behavior Analysis. Jesuit University of Guadalajara (ITESO) – Guadalajara, Jalisco (Mexico).

ORGANIZATION IN CONFERENCES

Secretary of the Organizing Committee

Avila-Chauvet, L., Mejía, D., & **Rodrigo, A.** (December 2020) First International Congress of the Cognition and Behavior Study Group, [www. ae-gec.com/Congreso/](http://www.ae-gec.com/Congreso/)

Main duties:

- Overall organization and final decisions regarding the conference.
- Establishment of a high-quality technical program.
- Responsibility for the peer review process.
- Organization of conference schedules.
- Promotion of the conference on social media.

STUDENT SUPERVISION

Bachelor's honors

Huanaco, R (In Progress)

Project Description: The research aims to know the effects that environmental factors, such as temperature and humidity have on food intake and weight variation in five captive Two-toed sloths (*Choloepus didactylus*).

National University of San Marcos – Lima, Peru (Peru).

ONLINE RESOURCES

Online Assessment: Evaluation of drug use during the Covid-19 lockdown.

Rodrigo, A., Avila-Chauvet, L., Mejía, D. (April 2020) **Evaluation of drug use during the Covid-19 lockdown.** https://docs.google.com/forms/d/e/1FAIpQLSez067kK622MRBN59UL2bGkL-93V_nGqBMuacTCE3DB5C5W6g/closedform

Online 2-dimensional bird-eye view spatial virtual task

Avila-Chauvet, L., & **Rodrigo, A.** (March 2018). **Spatial navigation task in a virtual environment.** http://ae-gec.com/ARod/7_CAN/

NON-ACADEMIC COMPETITIONS

Top Ten Finalists

Rodrigo, A., Esparza, C., Moreno, J., & Ojeda, Y. (November 2020) **RIS: Research Innovation Services.** Talent Hackathon @Home: Jobs Challenge. <https://youtu.be/3wOnmdURk9A>

Top Ten Finalists

Avila-Chauvet, L., Mejía, D., Moreno, J., & **Rodrigo, A.** (November 2020) **NESYCO: Network System for the Construction Industry.** Hacking Hub: Hackathon InnovaBrick. https://youtu.be/MlmGLE3c_Y8

WORKING PROJECTS

Rodrigo, A. (2023) **How density population affects the exploratory patterns of Channeled Apple Snails (*Pomacea canaliculata*) in a novel environment.**

Contribution Role:

- Conceptualization: Formulated the research question regarding how different methods of water aeration, housing dimensions, and population density affects the exploratory patterns (i.e., distance traveled, speed, velocity, and acceleration) of Channeled Apple Snails in a novel environment.
- Methodology: Crossover design.
- Software: Tracking exploratory behaviors of snails with Walden Tracking System. Data analysis using R and R Studio.
- Formal Analysis: GLMM analysis.
- Investigation: In charge of data collection, animal care, and maintenance.
- Resources: Building specially designed testing conditions.
- Writing – original draft: Creation of reproducible published manuscript using R Markdown.
- Visualization: Programming and implementation of the R code to visualize and present data.

- Supervision: Oversight and leadership responsibility for the research activity planning and execution.
- Project administration: Management and coordination responsibility for the research activity planning and execution.

Zeballos, A., Huanaco, R., Rojas, A., Hernandez, M. & **Rodrigo, A.**, (2023) **Insight of parental care in pair-living White-tailed titi monkeys (*Plecturocebus discolor*): Allocation of daily behaviors, before and after the birth of an infant at Parque de las Leyendas Zoo (Lima, Peru).**

Contribution Role:

- Conceptualization: Formulated the research question regarding how pair-living titi monkeys allocate their behaviors during the day, before, and after the birth of an infant.
- Methodology: Continuous focal sampling method, divided into 16 randomly distributed 15-minute daytime intervals across 8 hours of the day for 60 days (n = 252.75 hours of video recordings)
- Software: Undergraduate and zookeeper training to code behavioral data using OSS BORIS. Data analysis using R and R Studio.
- Formal Analysis: GLMM analysis. Investigation: Coordination of data collection and feedback to observers.
- Writing – original draft: Creation of a reproducible published manuscript using R Markdown.
- Visualization: Programming and implementation of the R code to visualize and present data.
- Supervision: International oversight and leadership responsibility for the research activity planning and execution.
- Project administration: Management and coordination responsibility for the research activity planning and execution.

Longán, A.; **Rodrigo, A.**, & Gómez-Medina, C. (2023) **Linking theory with the zoo: Evaluation of zoo animal training programs using a novel correspondence index based on the Skinnerian three-term contingency (Stimuli-Response-Reinforcer).**

Contribution Role:

- Conceptualization: Novel translational research design using the Skinnerian three-term contingency (Discriminative Stimuli - Operant Response - Reinforcer) to build a correspondence index to evaluate animal training programs at the zoo (Trainer Command - Animal Response - Food reward).
- Software: On-site data collection using Animal Behavior Pro. Data analysis using R and R Studio.
- Formal Analysis: GLMM analysis.
- Writing – original draft: Creation of a reproducible published manuscript using R Markdown.
- Visualization: Programming and implementation of the R code to visualize and present data.
- Project administration: Management and coordination responsibility for the research activity planning and execution. Partnership with the Animal Welfare Department of the Zacango Zoo.

Rodrigo, A., Mercadillo, R., Sordo, G. & Longán, A. (2024) **How to solve the long-term behavioral effect generated by poor environmental conditions? A model of spatial inequality in rodents.**

Contribution Role:

- Conceptualization: Formulated the research question regarding whether the expression of behavioral (i.e., free exploration in an open field) and neurobiological (i.e., synaptotagmin expression in the amygdala and hippocampus) traits of adult rats are affected by radical, rapid, sudden, and unexpected shifts in environmental configuration (e.g., changes in housing conditions) that was experienced in the earliest stages of development.
- Methodology: Alternating treatment design.
- Software: Configuration and usage of Topscan software to track rats' free movement.
- Formal Analysis: Adoption of OSS JASP.
- Resources: Building specially designed housing conditions.
- Writing – original draft: Reproducible published manuscript, R Markdown.
- Visualization: Data visualization and presentation, R.
- Supervision: Coordination and extraction of biological samples for analysis.
- Project administration: Partnership with the Area of Neurosciences of the Metropolitan Autonomous University.