

Curriculum Vitae

Name: Dr. Zoya Gordon

Date: 05.01.23

1. Personal Details

Permanent Home Address: 22 HaTikva St. 75220, Rishon LeZion 75220

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2. Higher Education

a. Undergraduate and Graduate Studies

Period of Study	Name of Institution and Department	Degree	Year of Approval of Degree
1988-1994	Mechanical Engineering, National Technical University, Kharkov, Ukraine	BSc+MSc (6 years program), (Cum Laude).	1994
1994-1997	Institution for Problems of Mechanical Engineering, Kharkov, Ukraine.	PhD program. Interrupted due to immigration to Israel.	1997
2002-2008	Biomedical Engineering, Tel-Aviv University, Tel Aviv, Israel.	PhD	2008
2006-2008	School of Education, Tel-Aviv University, Tel Aviv, Israel.	Teaching certificate in Mathematics	2008

b. Post-Doctoral Studies

No

3. Academic Ranks and Tenure in Institutes of Higher Education

Dates	Name of Institution and Department	Rank/Position
2013 - current	Afeka, Tel Aviv Academic College of Engineering	Lecturer, Faculty member
2007 - current	Ultrasound unit in Obstetrics and Gynecology, Lis Maternity Hospital, Tel-Aviv Sourasky Medical Center.	Chief Research Laboratory
2013	Department of Medical Engineering, Afeka Tel-Aviv Academic College of Engineering.	Guest lecturer

2010	Department of Medical Engineering, Afeka Tel-Aviv Academic College of Engineering.	Assistant lecturer
2004-2007	Faculty of Engineering, Tel Aviv University, Dep. of Biomedical Engineering.	Graduate Instructor

4. Offices in Academic Administration

2022 Member of the Teaching Committee, Afeka Tel-Aviv Academic College of Engineering.

5. Scholarly Positions and Activities outside the Institution

Memberships:

- 2004- Israeli Society for Medical and Biological Engineering (ISMBE)
- 2006- Biomedical Engineering Society (BMES)
- 2010- Israeli Society for Placental Research (ISPR)

6. Participation in Scholarly Conferences

a. Active Participation

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
Israeli Meetings				
June 14, 2005	Fluent Users' Group Meeting	Haifa, Israel	Feto-placental vasculature and blood flow.	Speaker
June 13, 2006	Fluent Users' Group Meeting	Haifa, Israel	Hemodynamics of fetal blood flow in Hyrtl anastomosis.	Speaker
March 11-13, 2008	ISMBE Annual Meeting	Tel Aviv, Israel	Anthropometry of Fetal Vasculature in the Chorionic Plate.	Speaker
June 19, 2009	the Annual Meeting of IFA	Jerusalem, Israel	Hemodynamic analysis of Hyrtl anastomosis in the human placenta.	Speaker
June 19, 2009	the Annual Meeting of IFA	Jerusalem, Israel	Cast models of fetal placental vasculature.	Speaker
October 19, 2010	the Annual Meeting of ISPR	Rehovot, Israel	Ex-vivo Human Placental Perfusion Model.	Speaker
November 03, 2011	the Annual Meeting of ISPR	Rehovot, Israel	Drug transport between fetal and maternal blood circulations in the human placenta.	Speaker
May 19-23, 2013	IFMSS	Jerusalem, Israel	The role of intra amniotic pressure in treatment of TTTS with amnioreduction.	Speaker

April 9-10, 2014	ISUOG	Tel Aviv, Israel	The role of intra amniotic pressure in treatment of TTTS with amnioreduction.	Speaker
November 26, 2019	ISPR, 10th Annual Meeting	Rehovot, Israel	Controlled pressure amnioreduction for TTTS.	Speaker
International Meetings				
June 25-29, 2003	Summer Bioengineering Conference	Key Biscayne, Florida, USA	Analysis of fetoplacental vasculature and blood circulation.	Speaker
September 28 - October 1, 2005	Annual Fall Meeting of BMES	Baltimore, USA	Feto-Placental Vasculature and Blood Flow.	Speaker
July 30 - August 4, 2006	the 5th World Congress of Biomechanics	Munich, Germany	Analysis of the placental vasculature network.	Speaker
July 30 - August 4, 2006	the 5th World Congress of Biomechanics	Munich, Germany	Hemodynamics of fetal blood flow in Hyrtl anastomosis.	
August 1-6, 2010	6th World Congress of Biomechanics	Singapore	Analysis of Uterine Peristalsis from Transvaginal Ultrasound Video Clips.	Participant
31 Aug-2 Sep, 2012	28th International Congress "Fetus as a Patient"	Mykonos, Greece	Ex-vivo Human Placental model for Analysis of Fetal Circulation in the Chorionic Plate.	Participant
May 13-16, 2013	15th International Academy on Human Reproduction (IAHR) World Congress	Venice, Italy	In-vitro Human Placental Perfusion	Participant
30 August-2 September 2017	International Federation of Placenta Associations Meeting	Manchester, UK	Ex-Vivo Human Placental Perfusion Model for Analysis of Feto-Placental Vasculature.	Participant

b. Organization of Conferences and Sessions

No

7. Invited Lectures/Colloquium Talks

Date	Place of Conference	Name of Forum	Presentation/Comments
2014	Ariel University	Department of Mechanical Engineering and Mechatronics	Engineering aspects in the Female Reproductive System
2013	Tel Aviv Sourasky Medical Center	MRI Institute	"In-vitro Human Placenta Perfusion Model".
2006	Tel Aviv University	Guest Lecturer in the Course "Computational Methods in Engineering", Department of Biomedical Engineering	"Analysis of Fetal Blood Flow in the Placenta"
2005	Tel Aviv University	Guest Lecturer in the Course "Human Reproductive systems", Department of Biomedical Engineering	"Feto-Maternal Blood Circulation"

8. Research Grants

a. Grants Awarded

Role in Research	Co-Researchers	Topic	Funded by/Amount	Year
Research assistant	Elad D, Jaffa AJ, Eytan O	In-vitro model of fetal blood flow through the placenta.	Young investigator grant, Slezak Super Center, TAU/ 10,000 NIS	2004
Research assistant	Elad D, Jaffa AJ, Eytan O	Hemodynamics of Fetal Blood Flow in Hyrtl's Anastomosis	Young investigator grant, Slezak Super Center, TAU/ 30,000 NIS	2007-08
Research assistant	Elad D, Jaffa AJ, Grisar D	Exploring markers of shear forces on ovarian epithelium as predictors for early diagnose of cancer	The Israel Cancer Association grant/ 25,000 NIS	2008-09
Research assistant	Elad D, Jaffa AJ	Hemodynamic analysis of blood circulation in the pathological placenta: in-vivo versus in-vitro measurements	Young investigator grant, Slezak Super Center, TAU/ 40,000 NIS	2008-09

b. Submission of Research Pending

No

c. Submissions of Research Proposals-Not Funded

No

9. Scholarships, Awards and Prizes

2003 - Second prize, Posters exhibition, Summer Bioengineering Conference, Key Biscayne, Florida, USA.

2005 - Zandman-Slaner fellowship, Tel-Aviv University, Tel Aviv, Israel.

2015 - Outstanding Research Project under my supervision, Afeka Tel-Aviv Academic College of Engineering.

10. Teaching

a. Coursed Taught in Recent Years

Year	Name of Course	Type of Course Lecture/Seminar/ Workshop/ Introduction Course (Mandatory)	Degree	Number of Students
2022	Advanced Laboratory in Biomechanics	Lecture, Afeka	BSc	50
2022	Engineering Graphics 1	Lecture, Afeka	BSc	50
2015	Advanced Strength of Materials	Lecture, Afeka	BSc	50
2014-current	Fluid Mechanics	Lecture, Afeka	BSc	50
2014	Fluid Mechanics 1	Lecture, Afeka	BSc	50
2013-current	Advanced Flow and Its Medical Applications	Lecture, Afeka	BSc	50
2012-current	Computational Methods in Engineering	Lecture, Afeka	BSc	50
2010-2011	Computational Methods in Engineering	Assistant lecturer, Afeka	BSc	50
2007	Advanced Laboratory in Biomechanics	Tutoring instructor, Tel-Aviv University	BSc	50
2006	Computational Methods in Engineering	Assistant lecturer, Tel-Aviv University	BSc	50
2004-2005	Artificial organs and implants	Tutoring instructor, Tel-Aviv University	BSc	50

b. Supervision of Graduate Students

No

Supervision of Undergraduate Students

- Reut Elany, Afeka. "Distribution of tensions in cervix during pregnancy "
- Katia Menahem, Afeka. "3D analysis of cervical cerclage ".
- Nataly Nyter, Afeka "Development of a fully controllable device for cervical dilatation"
- Hila Friedmann, Afeka. "System for urine emptying "
- Meital Bistri, Afeka. "Analysis of the stresses evolving in cervix during pregnancy"
- Dana Glozman, Afeka. " Diagnosis of placental insufficiency "
- Sara Levy, Afeka. "Early diagnosis of placental insufficiency by signal processing ".
- Marina Dobrinin, Afeka. "Umbilical cord insertion vs. placental perfusion".
- Adi Tsarfati and Daria Deev, Afeka. "Evaluation of fetal brain development based on the Sylvian Fissure".
- Maia Frajlich, Noam Shen, Noam Yanai, Afeka." Measurement of cervical dilation during labor".
- Shir Lahyani, Or Zekzer, Afeka. "Smart pad for estimating blood loss after vaginal birth"
- Alon Shani, Noam Kaufman, Afeka. "Anti -snoring bed".
- Dareen Saab, Jeries Matanis, Tel-Aviv University. "Signal processing and diagnosis of placental insufficiency".
- Adi Avisira, Bar Or Levy, Afeka." Numerical Models of Umbilical Cord Vessels' Blood Flow".
- Yael Peretz, Itay Herzlinger, Afeka." Smart pad for estimating blood loss after vaginal birth ".
- Maya Shilo, Noa Machnes, Afeka." Mechanical Parameters Comparison between Sphere and T-shaped Cu-IUDs ".
- Tal Kushel, Lee Farchi, Afeka." Measurement of cervical dilation during labor ".
- Victoria Rogach, Korel Asraf, Afeka." Development of IUD with shape memory effect and comparison to other IUDs".

11. Miscellaneous

No

12. Professional Experience

2007 - current Ultrasound unit in Obstetrics and Gynecology, Lis Maternity Hospital, Tel-Aviv Sourasky Medical Center.

PUBLICATIONS

A. Ph.D. Dissertation

Thesis Title: Analysis of Fetal Blood Flow in the Placenta

Supervisor: Prof. D. Elad, Prof. A.J Jaffa and Dr. O. Eytan

Year: 2008, No. of pages: 103, Language: English

Department of Biomedical Engineering, Tel-Aviv University, Tel Aviv, Israel.

Refs:

1. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Hemodynamic analysis of Hyrtl anastomosis in the human placenta. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, 292: R977-R982, 2007.
2. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Fetal blood flow in branching models of the chorionic arterial vasculature. *Annals of the New York Academy of Sciences*, 1101: 250-265, 2007.
3. **Gordon Z**, Elad D, Almog A, Hazan Y, Jaffa AJ, Eytan O. Anthropometry of fetal vasculature in the chorionic plate. *Journal of Anatomy*, 211: 698-706, 2007.

B. Scientific Books (Refereed)

No

A. Authored Books –Published

No

Authored Books-Accepted for Publications

No

B. Edited Books and Special Issues-Published

No

Edited Books and Special Issues-Accepted for Publication

No

C. Other Scientific Publications

No

D. Articled in Refereed Journals

1. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Hemodynamic analysis of Hyrtl anastomosis in the human placenta. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, 292: R977-R982, 2007. **Q1, IF 3.853.**
2. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Fetal blood flow in branching models of the chorionic arterial vasculature. *Annals of the New York Academy of Sciences*, 1101: 250-265, 2007. **Q1, IF 1.95.**

3. **Gordon Z**, Elad D, Almog A, Hazan Y, Jaffa AJ, Eytan O. Anthropometry of fetal vasculature in the chorionic plate. *Journal of Anatomy*, 211: 698-706, 2007.
Q1, IF 2.806.
4. Even-Tzur N, Jaffa AJ, **Gordon Z**, Gottlieb R, Kloog Y, Einav S, Wolf M, Elad D. Air-liquid interface culture of nasal epithelial cells on denuded amniotic membranes. *Cellular and Molecular Bioengineering*, 3: 307-318, 2010.
Q2, IF 2.163.
5. Meirzon D, Jaffa AJ, **Gordon Z**, Elad D. A new method for analysis of non-pregnant uterine peristalsis from transvaginal ultrasound. *Ultrasound in Obstetrics and Gynecology*, 38: 217-224, 2011.
Q1, IF 3.007.
6. Levkovitz R., Zaretsky U., **Gordon Z**, Jaffa A., Elad D. " In vitro simulation of placental transport Part I. Biological model of the placental barrier". *Placenta*, 34: 699-707, 2013.
Q1, IF 3.285.
7. **Gordon Z**, Glaubach L, Elad D, Zaretsky U, Jaffa A. "Ex-vivo Human Placental Perfusion Model for Analysis of Fetal Circulation in the Chorionic Plate", *Journal of Ultrasound in Medicine*, 35: 553-560, 2016.
Q2, IF 1.828.
8. Link D, Many A, Ben-Sira L, Tarrasch R, Bak S, Kidron D, **Gordon Z**, Yagel S, Harel S, Ben Bashat D. S. Placental vascular tree characterization based on ex-vivo MRI with a potential application to placental insufficiency assessment. *Placenta*, 96: 34-43, 2020.
Q1, IF 3.481.
9. Link-Sourani D, Avidris N, Harel S, Ben-Sira L, Ganot T, **Gordon Z**, Many A, Ben Bashat D. S. Ex-vivo MRI of the normal placenta: structural-functional interplay and the association with birth weight. *J Magn Reson Imaging*, 2021; doi: 10.1002/jmri.28002.
Q1, IF 4.813.
10. **Gordon Z**, Fattal-Valevski A, Elad D, Jaffa AJ. Controlled Amnioreduction for Twin-to-Twin Transfusion Syndrome. *Therapeutic Advances in Reproductive Health*. 16:1-9, 2022.
Q3, IF 1.7.

E. Articled or Chapters in Scientific Books

No

F. Articled in Conference Proceedings

Published

1. **Gordon Z**, Elad D, Hazan Y, Jaffa AJ, Eytan O. Analysis of fetoplacental vasculature and blood circulation. Proc. of the 2003 Summer Bioengineering Conference, Key Biscayne, Florida, USA, June 25-29, P. 817-8, 2003.
2. **Gordon Z**, Elad D, Jaffa AJ, Eytan O. Fetoplacental vasculature and blood flow. Proc. of Fluent Users' Group Meeting, Haifa, Israel, June 14, 2005.
3. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Fetoplacental Vasculature and Blood Flow. Proc. of 2005 Annual Fall Meeting of BMES, Baltimore, MD, September 28-October 1, 2005.
4. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Hemodynamics of fetal blood flow in Hyrtl anastomosis. Proc. of Fluent Users' Group Meeting, Haifa, Israel, June 13, 2006.
5. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Analysis of the placental vasculature network. Proc. of the 5th World Congress of Biomechanics, Munich, Germany, July 30 - August 4, 2006. (Journal of Biomechanics, 39: S341, 2006).
6. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Hemodynamics of fetal blood flow in Hyrtl anastomosis. Proc. of the 5th World Congress of Biomechanics, Munich, Germany, July 30- August 4, 2006. (Journal of Biomechanics, 39: S340, 2006).
7. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Anthropometry of Fetal Vasculature in the Chorionic Plate. Proc. of ISMBE 2008 Annual Meeting, March 11-13, Tel Aviv, Israel.
8. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Hemodynamic analysis of Hyrtl anastomosis in the human placenta. Proc. of the Annual Meeting of IFA, Jerusalem, Israel, June 19, 2009.
9. **Gordon Z**, Eytan O, Jaffa AJ, Elad D. Cast models of fetal placental vasculature. Proc. of the Annual Meeting of IFA, Jerusalem, Israel, June 19, 2009.
10. **Gordon Z**, Glaubach L, Elad D, Zaretzky U, Jaffa AJ. Ex-vivo Human Placental Perfusion Model. Proc. of the Annual Meeting of ISPR, Rechovot, Israel, October 19, 2010.
11. Meirzon D, **Gordon Z**, Jaffa AJ, Elad D "Analysis of Uterine Peristalsis from Transvaginal Ultrasound Video Clips". 6th World Congress of Biomechanics, Singapore, August 2010.
12. LLevkovich R, **Gordon Z**, Jaffa AJ, Elad D. Drug transport between fetal and maternal blood circulations in the human placenta. Proc. of the Annual Meeting of ISPR, Rechovot, Israel, November 03, 2011.
13. Jaffa AJ, **Gordon Z**, Glaubach L, Zaretzky U, Elad D. " Ex-vivo Human Placental model for Analysis of Fetal Circulation in the Chorionic Plate", 28th International Congress "Fetus as a Patient", Mykonos, Greece, 31 Aug-2 September 2012.
14. Jaffa AJ, **Gordon Z**, Zaretzky U, Elad D. " In-vitro Human Placental Perfusion", 15th International Academy on Human Reproduction (IAHR) World Congress, Venice, Italy, 13-16 Mar, 2013.
15. Jaffa AJ, **Gordon Z**, Eytan O, Har-Toov J. " The role of intra amniotic pressure in treatment of TTTS with amnioreduction", IFMSS, Jerusalem, Israel, 19-23 May 2013.

16. Jaffa AJ, **Gordon Z**, Eytan O, Har-Toov J. " The role of intra amniotic pressure in treatment of TTTS with amnioreduction", ISUOG, Tel Aviv, Israel, 9-10 April 2014.
17. Elad D, **Gordon Z**, Zaretzky U, Jaffa AJ. "**Ex-Vivo** Human Placental Perfusion Model for Analysis of Feto-Placental Vasculature ". International Federation of Placenta Associations Meeting, Manchester, UK, 30 August- 2 September 2017.
18. **Gordon Z**, Fattal-Valevski A, Elad D, Jaffa AJ. "Controlled pressure amnioreduction for TTTS", ISPR, 10th Annual Meeting, Israel, 26 November 2019.

Accepted For Publication

No

G. Entries in Encyclopedias

No

Other Scientific Publications

No

H. Other Publications

No

I. Other Publications

No

J. Submitted Publications

No

K. Summary of my Activities and Future Plans

- Developed a series of presentations, exercises, and solutions for the course "Computational Methods in Engineering".
- Developed a Debate task for the course "Advanced Flow and Its Medical Applications".
- Developed and introduced interactive activities for the course "Advanced Flow and Its Medical Applications" this year.
- In partnership with Doctor Moran Aviv working on a new IUD with a shape memory effect. A grant proposal for research funding is actively being made. This entails the collaboration with Ariel university.