

Network Gender & STEM Conference 2026

July 9 to 11, 2026

University of Salzburg, Austria

gstem26.ers-salzburg.at

Conference Agenda

The present short programme reflects the status as of 6 May 2026. Organizational details, such as the chairs of the sessions for individual papers, will be added by the end of May 2026. The presentation time for individual papers is approximately 12 minutes, followed by about 3 minutes of discussion. Updates will always be made in ConfTool:

<https://www.confTool.pro/gstem2026>

Network Gender & STEM Conference 2026

Date: Thursday, 09/July/2026

7:00pm - 10:00pm

010: Welcome Reception

Location: **Rooftop Terrace Unipark Nonntal**

Date: Friday, 10/July/2026

8:30am - 9:00am

020: Conference Opening

Location: **Campus Level Foyer | 0**

9:00am - 10:00am

030: Keynote: Heidrun Stöger

Location: **E.001 | Main Lecture Hall | 0**

Professor of School Pedagogy, University of Regensburg (Germany)

Unlocking Potential: How Mentoring and Networking Drive Girls' Engagement in STEM

Despite decades of initiatives to promote gender equity in STEM, the underrepresentation of girls and women remains a persistent global issue. Research shows that mentoring and structured networking can play a transformative role in addressing this gap—offering guidance, role models, and long-term support that shape educational and career trajectories. This keynote explores how digital mentoring and online communities can foster sustained STEM engagement among girls. Drawing on findings from large-scale, longitudinal research—including evidence from CyberMentor, Germany's most extensive online STEM mentoring program for girls—this talk illustrates how structured mentor-mentee relationships and digitally facilitated peer interactions contribute to increased self-efficacy, stronger STEM identity, and career intentions. Crucially, these changes are shown to influence actual study and career choices in STEM. The presentation highlights the mechanisms that make mentoring effective: authentic role modeling, accessible communication, and digital communities and projects that enable ongoing STEM-related exchange. Particular emphasis is placed on how the quality and frequency of interaction – both with mentors and within peer networks – shape developmental outcomes. The integration of online mentoring with in-person, hands-on STEM experiences (as in hybrid models such as CyberMentor Plus) emerges as a promising direction for increasing impact. By synthesizing empirical insights and practical strategies, this keynote offers evidence-based guidance for educators, policymakers, and program designers seeking to build inclusive, scalable frameworks for engaging the next generation of women in STEM. It makes the case for mentoring and network-building not as add-ons, but as core components of effective STEM education and equity efforts.

10:00am - 11:00am 040: Poster Session with Integrated Coffee Break

Location: E.003 | Poster Session | -1

Does parents' STEM capital pave the way? An overview of identification, career choice motives, STEM choice intentions of students at German Secondary Schools with a focus on gender

Johanna Pfeuffer¹, Heidrun Stoeger², Albert Ziegler¹

¹Friedrich-Alexander-University of Erlangen-Nürnberg, Germany; ²University of Regensburg, Germany

Understanding the Impact of STEM College and Career Preparation Experiences among High School and Undergraduate Students

Sabina Iturralde, Qianqian Wang, Yamini Bhukya, Jessica Summers

University of Arizona, United States of America

Science Capital in Primary Education: Conceptual Foundations, Pilot Findings, and Directions for the Design-Based Research Project PrimaMINT

Sabine Hasenhütl¹, Anna Hainberger¹, Smrina Malkoc¹, Daniel Dulle¹, Silke Luttenberger¹, Manuela Paechter², Paromita Roy³

¹Pädagogische Hochschule Steiermark, Austria; ²Universität Graz, Austria;

³Jagadis Bose National Science Talent Search, India

Observing Physics, Observing Gender: Classroom practices and interactions

Natascha Musters, Rian Aarts, Marije van Amelsvoort, Marc Swerts

Tilburg University, Netherlands, The

Invisible Rules, Visible Gaps: Descriptive and Injunctive Norms regarding Girls' STEM Pathways

Anne-Sophie Forche¹, Albert Ziegler², Heidrun Stöger¹

¹University of Regensburg, Germany; ²Friedrich-Alexander University Erlangen-Nuremberg, Germany

The Female Fish in the Big Male Pond: Gender and Achievement Compositions' Impact on Mathematics Self-Efficacy and STEM Career-Aspirations

Jana Schuster, Annabell Daniel

Ludwig-Maximilians Universität, München, Germany

Supportive relationships in STEM higher education: Understanding factors that encourage STEM career aspirations

Zulima Marti Cunat¹, Isabel Ferreras Gonzalez², Oksana Kavatsyuk¹

¹University of Groningen, The Netherlands; ²Graduate School of Quantum Technologies, Université Paris Cité, France

Niedersachsen-Technikum: Study STEM? Just give it a try!

Judith Elisabeth Bräuer, Svenja Folkerts, Johanna Risse

Hochschule Osnabrück, Germany

The Dynamic Holistic Convergence Model (DHCM): A new Theoretical Perspective on the Gender Gap in STEM

Brigitte Merz¹, Heidrun Stoeger², Albert Ziegler¹

¹Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; ²Universität Regensburg, Germany

Mapping Gendered Networks in Mathematics through Doctoral Supervision and Co-authorship Analysis

Dongna Chen, Gerold Jäger, Helena Pettersson, Lars-Daniel Öhman

Umeå University, Sweden

Introducing a new Personalized Relevance Intervention for Mathematics Education

Luis Fischer, Hanna Gaspard

University of Konstanz, Germany

Do Role Expectations of STEM Professionals who Mentor Girls in STEM and Teachers who Support the Mentoring via Extracurricular STEM Clubs Align?

Natalie Bauer¹, Kathrin J. Emmerdinger¹, Sonja Bayer¹, Albert Ziegler², Heidrun Stoeger¹

¹University of Regensburg (Germany); ²University of Erlangen-Nuremberg

STEM? No, thank you! The career development of women in STEM fields and how university communications can help attract more women to STEM degree programs

Svenja Folkerts

Hochschule Osnabrück, Germany

Gender differences among students in active-learning classrooms in university STEM education

Emilia Duszynska, Bent Beckmann, Oksana Kavatsyuk

University College Groningen, University of Groningen, The Netherlands

A double-edged sword: does the use of AI and other digital technologies reduce or exacerbate existing gender inequalities in the labour market?

Carola Burkert, Britta Matthes, Grienberger Katharina

IAB, Germany

The Influence of Gender-Sensitive Language in German on Memory Retrieval: Cognitive Implications for Gender-Fair Communication in STEM

Carla Heinicke, Vera Ruthsatz, Hartmut Neuf

Universität Koblenz, Germany

The Role of Undergraduate Research and Mentorship in Supporting STEM Students

Stephanie Ramos

Oregon State University, United States of America

Gender Awareness as a Blind Spot in Professional Learning: Reflections from Pre- Service Primary Teachers in the Austrian Summer School Program

Anna Hainberger, Sabine Hasenhütl, Smirna Malkoc, Silke Luttenberger
University College of Teacher Education Styria, Austria

Boosting female participation in Technical Vocational Education and Training

Emilija Schornagel, Oksana Kavatsyuk
University College Groningen, University of Groningen, The Netherlands

Women Belong Here: Dissecting the Communities of Practice of a Doctoral Mathematics Program in the United States

Brandi Whiteman
Oregon State University, United States of America

Empowering Future Educators: STEM Majors' Journey in K-12 Teaching

Mamta Singh, Kenidy Bennett, Maryah Javed
Lamar University, United States of America

Beyond the Textbook: Teaching STEM Through the Lens of Global Trade

Mamta Singh, Maryah Javed
Lamar University, United States of America

Building digital capital in families: the role of emotions

Radka Dudova
Institute of Sociology, Czech Academy of Sciences, Czech Republic

Three essentials for a successful STEAM education for girls

Alexandrina Satnoianu
none, Lithuania

11:00am - 12:00pm

050: Panel Discussion

Location: **E.001 | Main Lecture Hall | 0**

Panel Discussion

This session is a moderated panel discussion on the conference theme, bringing together distinguished experts from academia, research leadership, STEM coordination, and educational psychology.

Panelists in alphabetical order

Prof. Dr. Jacquelynne S. Eccles

Professor Emeritus, School of Education
University of California, Irvine, USA

Prof. Dr. Jutta Horejs-Höck

Vice Rector for Research; University Professor of Biosciences and Medical
Biology
University of Salzburg, Austria

Dr. Carmen Wageneder-Schmid

Head of MINT Salzburg / STEM Coordination Office
Innovation Salzburg, Austria

Prof. Dr. Allan Wigfield

Professor Emeritus, Department of Human Development and Quantitative
Methodology
University of Maryland, USA

Moderator

Prof. Dr. Burkhard Gniewosz

Professor for Quantitative Research Methods in Educational Science
University of Salzburg, Austria

12:00pm - 1:30pm

060: Lunch

12:00pm - 1:30pm

062: Lunch with Professors

Location: **Pizzeria & Restaurant Casaantonio e piccolo gio Grande**

1:30pm - 3:00pm

070: Symposium - Developmental Perspectives on Women in STEM

Location: Room 1.006 & 1.007 | 1

A developmental lens on gendered stereotypes, motivations, educational and workplace influences on girls'/women's STEM engagement

Chair(s): **Helen M. G. Watt** (University of Sydney, Australia)

Discussant(s): **Jacquelynn S. Eccles** (UC-Irvine, USA)

Presentations of the Symposium

Gendered Development of Motivational Beliefs in STEM-related Fields During Adolescence: A Situated Expectancy-Value Perspective

Marilyn Fleer

Monash University

The Emergence of Gender Stereotypes about STEM Fields in Early and Middle Childhood

Carlo Tomasetto¹, Sarah Martiny²

¹University of Bologna, Italy, ²UiT The Arctic University of Norway

A Cultural-Historical Study of the Genesis and Disruption to Girls' Motives and Competencies in STEM

Wendy Symes¹, Rebecca Lazarides², Lorelle Meadows³

¹University of Muenster, Germany, ²University of Potsdam, Germany, ³Michigan Technological University, USA

Experimental, behavioral research on expressions of subtle gender bias among STEM undergraduates

Denise Sekaquaptewa¹, Nadia Vossoughi²

¹University of Michigan, USA, ²Grinnell College, USA

Navigating Gendered Pathways: Women's Leadership in India's Elite STEM Institutions

Ravinder Kaur¹, Taanya Kapoor²

¹Indian Institute of Technology Delhi, ²University of Oxford

1:30pm - 3:00pm

071: Symposium - Inclusive Belonging in STEM

Location: Room 2.407 | 2

Building gender-inclusive belonging in STEM education and emerging industries

Chair(s): **Eva Cheng** (University of Technology Sydney)

Discussant(s): **Petra Lucht** (Technische Universität Berlin)

Presentations of the Symposium

Understanding the critical role of inclusive community in STEM gender equity programs

Emily Canda, Faezeh Karimi, Rodrigo Perez Toledo

University of Technology Sydney

Building inclusion and belonging in engineering classroom climates

Eva Cheng, Catharine Pruscino

University of Technology Sydney

Integrating Gender Aspects into the Curricula of Bachelor's and Master's Degree Programs: An Inter-university Certificate Program on Gender & Diversity in Science & Technology Studies

Prof. Dr. Petra Lucht¹, Prof. Dr. Martina Erlemann²

¹Technische Universität Berlin, ²Freie Universität Berlin

Gendered In/Visibilities in STEM – the case of quantum technologies

Prof. Dr. Martina Erlemann, Andrea Bossmann, Tamar Grosz

Freie Universität Berlin

Virtual Realities and Genuine Participation: Contributions of VR and AR to Diversity, Gender and Healthcare

Prof. Dr. Heike Wiesner, Lily Dausch, Jan Stepczynski, Kaan Turan

Berlin School of Economics and Law, Harriet Taylor-Mill Institute

1:30pm - 3:00pm

072: Symposium - Gendered (Meta-)Cognition in STEM Education

Location: Room 2.337 | 2

Gendered patterns in cognitive and metacognitive processes across STEM education

Chair(s): **Manuela Paechter** (University of Graz, Austria), **Silke Luttenberger** (University College of Teacher Education Styria)

Discussant(s): **Penelope Watson** (The University of Auckland)

Presentations of the Symposium

STEM education in virtual reality: Gender differences in cyber sickness, cognitive load, and learning

Carina Galler, Bernhard Ertl

Universität der Bundeswehr München

Confidence, calibration, and gender differences in rational number understanding

Christina Imp¹, Florian Stampfer²

¹University College of Teacher Education Tyrol, ²University of Innsbruck

Understanding the gender gap in computational thinking: The role of prior programming experience

Julia Pöschko¹, Ferenc Kemény², Karin Landerl¹

¹University of Graz, ²University of Graz, Eötvös Loránd University

Computational thinking as a gateway to equitable STEM learning: Bridging teacher education and classroom practice

Sabine Hasenhütl¹, Manuela Paechter², Silke Luttenberger¹

¹University College of Teacher Education Styria, ²University of Graz

1:30pm - 3:00pm

073: Symposium - Gendered Care Work in Academia

Location: **Room 1.003 | 1**

Care work in the academy and its gendered implications for STEM

Chair(s): **Leslie Gonzales** (University of Arizona, United States of America)

Discussant(s): **Josiah Rosario** (University of Michigan)

Presentations of the Symposium

Layers of constraint: Gendered discourses of choice in career decision-making of men and women STEM postdocs

Dawn Culpepper¹, Ivet Parra-Gaete²

¹University of Maryland, ²University of Arizona

The changing career trajectories of new parents in STEM

Erin Cech

University of Michigan

Times of crisis: Early career scholars' experiences by parental status, gender, and race/ethnicity

Danielle Parra, Isis Settles

University of Michigan

An ethic of care/rage? STEM doctoral students' orientations to academic work

Leslie Gonzales, Karina Rodriguez, Brooke Moreno

University of Arizona

1:30pm - 3:00pm

075: Individual Papers - STEM Gender Choices

Location: Room 1.004 | 1

Student Competitions in STEM Fields: Why Do Girls and Boys Choose (Not) to Participate?

Lorena Fleischmann, Vivien Rieder, Birgit Spinath

Ruprecht-Karls-Universität Heidelberg, Germany

What predicts STEM choices and retention? A meta-analytic path analysis of existing research on the situated expectancy-value theory.

Fabian Heller¹, Albert Ziegler², Heidrun Stoeger¹

¹University of Regensburg, Germany; ²Friedrich-Alexander University of Erlangen-Nuremberg, Germany

Why do people decide for or against a career in STEM? A study on interest in STEM and reasons for or against a STEM career in Switzerland

Susanne Metzger, Laura Villardita

University of Basel and FHNW School of Education, Switzerland

Blind Entry, Rational Exit: Lagged Responses to Labor-Market Signals and Gender in STEM educational decision-making

Mingming Li, Wilfred Uunk

University of Innsbruck, Austria

Selecting a vocational program: intraindividual motivational hierarchies predicting occupational interests and required skills

Kukka-Maaria Polso¹, Hanna Gaspard², Heta Tuominen³, Petri Ihantola⁴, Markku Niemivirta³

¹University of Helsinki, Finland; ²University of Konstanz, Germany; ³University of Eastern Finland, Finland; ⁴University of Jyväskylä, Finland

1:30pm - 3:00pm

077: Individual Papers - Mentoring Women in STEM

Location: Room 1.005 | 1

Peer Mentoring of Undergraduate and Graduate Women in Science and Engineering: Intentional Persistence, Behavioral Persistence, and Generative Leadership

Angela Kelly¹, Kristin Sherwood^{1,2}

¹Stony Brook University, United States of America; ²St. Joseph Hill Academy, United States of America

Mentor Role Expectations in Mentor–Mentee Dyads: Alignment and Impact on Mentoring Success in a STEM Program for Girls

Kathrin Johanna Emmerdinger¹, Claudia Uebler¹, Sonja Bayer¹, Albert Ziegler², Heidrun Stoeger¹

¹University of Regensburg, Germany; ²Friedrich-Alexander University of Erlangen-Nuremberg, Germany

Mentoring as a Bridge to Gender Equity in STEM Pathways: Lessons from STEM Sista’s Implementation Across Urban, Regional, and Rural Australia

TERESA JANOWSKI

Stem Fasttrack, Australia

Beyond Good Intentions: Evidence-Based Mentoring Programs for Girls in STEM

Tahnee West, Cindy Ann Smith, Carly Steele

Curtin University, Australia

Leveraging Mentoring to Advance Girls in STEM in Low- and Middle-Income Countries

Eric Opoku Agyemang

Patriots Ghana, United States of America

<p>1:30pm - 3:00pm</p>	<p>079: Make a Pitch</p> <p><u>Make a Pitch</u></p> <p>This moderated session offers participants the opportunity to briefly present a project, idea, initiative, or collaboration proposal. The format is not intended as a scientific presentation. Instead, each pitch should be concise, focused, and aimed at receiving feedback, encouraging exchange, and initiating potential collaborations. Each presentation may last a maximum of 5 minutes.</p> <p><u>Moderation</u></p> <p>Melissa Hardtke</p>
<p>3:00pm - 3:30pm</p>	<p>080: Coffee Break</p> <p>Location: Library Level Foyer -1</p>
<p>3:30pm - 4:30pm</p>	<p>090: Keynote: Prajval Shastri</p> <p>Location: E.001 Main Lecture Hall 0</p> <p>Indian Institute of Astrophysics (retired) Adjunct Professor, University of Western Australia (Australia)</p> <p>Degendering Physics: Why So Slow?</p> <p>Among the STEM disciplines, physics has been long-known to exhibit among the most skewed of gender gaps. It has been over a quarter of a century since attention has been drawn to the evidence that the over-representation of men at multiple levels in the physics enterprise is significant and global, though to varying degrees. The evidence also has pointed to the cause being societal patriarchy leaching into academia and causing gender-based discrimination within, a trend not tempered by the "objectivity" that is attributed to the physics discipline. Progress towards a more equitable physics enterprise has been slow, however. I will argue that the slowness is because several mitigative interventions seek to address only the symptoms, besides also being moulded by patriarchy, and that it is important to explicitly step away from the all-too-common "Fixing-the-women" approach. Instead, the focus needs to be on addressing the root causes of gender inequity. Interventions need to be interrogated on whether they will bring about long-term cultural transformation, whether they exclude anyone and whether they could cause harm, and whether as physicists we have really constructed "merit" in a way that actually promotes understanding our universe. Specific examples from across the globe will be discussed.</p>
<p>4:30pm - 4:45pm</p>	<p>100: Room Change</p>

4:45pm - 5:45pm

110: Individual Papers - STEM Role Models and Social Agents

Location: Room 1.003 | 1

Title: The impact of parental and teacher involvement on students' self-confidence in Science, Technology, Engineering and Mathematics: comparing boys and girls in Kayonza (Rwanda) high schools.

Dianah MUTONI

KU Leuven, Belgium

Navigating the STEM Pipeline: A Scoping Review of Social Agents and Gender Equity

Maryam Shiani¹, Charlotte Popp¹, Heidrun Stoeger², Albert Ziegler¹

¹Chair of Educational Psychology and Excellence Research, Friedrich-Alexander-University Erlangen-Nuremberg, Germany; ²Chair of School Research, School Development, and Evaluation, University of Regensburg, Germany

Closing the STEM gender gap. A systematic review and meta-analysis of role model effectiveness

Elena De Gioannis, Loria Cristina, Pozzoli Cristina

University of Milan, Italy

More than Role Models – How STEM-professional parents shape their children's interest in STEM occupations

Christine Steiner, Stefan Hofherr

German Youth Institute, Germany

4:45pm - 5:45pm

112: Individual Papers - Gender and Digital Learning Technologies

Location: Room 1.004 | 1

Gender Inequalities in Generative AI Literacy and Use among College Students for STEM Learning

RAN LIU, Carla Glave

University of Wisconsin-Madison, United States of America

Tale of Two Schools: Ethnographic Insights into Digital Technology Use in Czech Elementary Education

Josef Vošmik, Nina Fárová

Institute of Sociology, Czech Academy of Sciences, Czech Republic

A Gendered Perspective on Cognitive and Affective-Motivational Learning Processes in Intelligent Tutoring System Use

Anja Henke¹, Helen M. G. Watt², Rebecca Lazarides^{1,3}

¹University of Potsdam, Germany; ²The University of Sydney; ³Cluster of Excellence "Science of Intelligence"

Selective Adherence Matters: Extension and Validation of Bias Blind Spot Scale to Human-Algorithm Advice Taking Systems

Vera Ruthsatz¹, Irina Heimbach², Oliver Müller³, Mirko Saunders¹

¹University of Koblenz, Germany; ²Weizenbaum Institute for Networked Society, Berlin, Germany; ³Paderborn University, Germany

4:45pm - 5:45pm

114: Individual Papers - Gender Patterns in STEM Learning

Location: Room 1.005 | 1

Gender and the Computer Science Exam in Polish Secondary Schools

Alicja Zawistowska

Uniwersytet w Białymstoku, Poland

What Sparks Enjoyment in Physics? Gendered Patterns in the Links Between Situational Enjoyment, Interest, and Teacher Relatedness

Kezia Olive

University of Helsinki, Finland

Exploring Female Students' Perspectives on Physics Learning Experiences in Secondary Schools: A Study of Technology-Infused Instruction Using Simulation

Angela Rutakomozibwa¹, Samson Nashon²

¹Faculty of Education - University of British Columbia, Canada; ²Faculty of Education - University of British Columbia, Canada

Beyond Free Choice: How School Policies Shape the Gender Paradox in STEM

Halleli Pinson¹, Yariv Feniger¹, Gila Manevich Malul¹, Maria Charles²

¹Ben-Gurion University of the Negev, Israel; ²UCSB

4:45pm - 5:45pm

116: Individual Papers - Gender, Skills, and Achievement

Location: Room 2.407 | 2

Pathways to Gender Equity in Latin America and the Caribbean: A Comparative Analysis of Trends in Mathematics Gender Gaps Using PISA Data

Lorena Ortega¹, Matías Montero², Álvaro Romero¹, Catalina Canals¹, Alejandra Mizala¹

¹Universidad de Chile, Chile; ²University of Oxford, UK

Gender differences in spatial ability: a network comparison approach

Maksim Likhanov¹, Yulia Kovas²

¹Aix-Marseille university, France; ²Higher School of Economics, Russia

Intersectional Effects of Sex and Parental Education in the Development of Science Literacy in Children

Maximilian Seitz

Leibniz Institute for Educational Trajectories, Germany

Habitual video gaming and its links with spatial ability: the analysis of gender differences

Ksenia Bartseva, Maxim Likhanov, Yulia Kovas

Cognitive Health and Intelligence Centre, HSE University

4:45pm - 5:45pm

118: Individual Papers - Career Guidance and STEM Interventions

Location: Room 2.337 | 2

Influencing students' expectations of STEM careers by career guidance in secondary education

Hanke Korpershoek

University of Groningen, Netherlands, The

'kids career' – An intervention study to influence gender-specific career stereotypes and promote the interests of eight-year-old children using role models

Sabrina Happe, Ingelore Mammes

University of Duisburg-Essen, Germany

Girls into STEM: Which interventions work?

Melanie C. Steffens¹, Sarah E. Martiny², Susanne Bock³

¹RPTU University Kaiserslautern-Landau, Germany; ²UiT The Arctic University of Norway, Norway; ³Baden-Wuerttemberg Cooperative State University Karlsruhe, Germany

From Battery Labs to Bold Futures: the research club Role2Role

Anne Geese, Tessa Horenburger

TU Braunschweig, IFDN, Germany

7:30pm - 11:45pm

120: Conference Dinner

Date: Saturday, 11/July/2026

8:30am - 9:30am

130: Keynote: Catherine Riegler-Crumb

Location: **E.001 | Main Lecture Hall | 0**

Professor of Sociology, and Director for the Center of Research on Educational Opportunity (CREO), Notre Dame University (USA)

Constructing (and Disrupting) Gender Inequality in STEM Fields

Using the framework of gender as a social structure, this talk will discuss research examining how gendered messages in the local contexts of educational spaces, as well as individuals' understandings of gender, contribute to creating inequality; and whether and how they could be utilized to disrupt it. Additionally, the importance of considering variation in patterns and experiences by race and social class will be highlighted. The talk will cover a range of large-scale quantitative studies, as well as qualitative studies.

9:30am - 9:45am

140: Room Change

9:45am - 10:45am

150: Individual Papers - Diversity Interventions in STEM

Location: **Room 1.003 | 1**

The Disappearing Mathematical Talent of Girls: How *Kidumatica* Reveals, Protects, and Cultivates Hidden Potential

Miriam Amit

Ben Gurion University, Israel

Fostering Girls' Participation in STEM through Strength-Based Mathematics Interventions: Linking Self-Concept and Belonging

Lara Steiner, Lisa-Marie Ruppert, Lara Gildehaus

University of Klagenfurt, Austria

Who Gets Engaged? Zoomed in on Diversity Interventions in STEM Education

Charlotte Popp¹, Diana Wengler², Heidrun Stoeger², Albert Ziegler¹

¹FAU Erlangen-Nuremberg, Germany; ²University Regensburg, Germany

Challenging Field-Specific Ability Beliefs: A Refutation Text Intervention in Mathematics and Philosophy

Vanessa Clauss¹, Arian Leopold², Michaela Köller¹, Friederike Zimmermann¹, Daniela Renger²

¹Institute for Psychology of Learning and Instruction, Kiel University, Germany,;

²Institute of Psychology, Kiel University, Germany

9:45am - 10:45am

152: Individual Papers - Teachers' Beliefs and Gender Equity

Location: Room 1.004 | 1

Empirical Approach: Physics Identity of Preservice Science Teachers

Andrea Maria Schmid, Dorothee Brovelli

University of Teacher Education Lucerne, Switzerland

Gender-Related Beliefs as Predictors of Future Teachers' Professional Vision in Physics Education

Sanja Hersche Atanasova¹, Nicolas Robin¹, Helen M. G. Watt², Dorothee Brovelli³

¹University of Teacher Education St.Gallen, Switzerland; ²The University of Sydney, Australia; ³University of Teacher Education Lucerne, Switzerland

The connection between (stereotypical) teacher expectations in STEM and competency expectations of their students

Katharina Fink^{1,2}, Hanna Beisert^{1,2,3}

¹DIPF | Leibniz Institute for Research and Information in Education, Germany; ²IDeA Center Individual Development and Adaptive Education; ³Goethe University Frankfurt

Teacher Motivation and Gender Equity in Mathematics Achievement: Insights from TALIS and PISA

Helena Granziera¹, Robert Klassen²

¹UNSW, Australia; ²University of Oxford

9:45am - 10:45am

154: Individual Papers - Parental Influence on Girls' STEM Choices

Location: **Room 1.005 | 1**

Gendered Patterns of Parental Involvement and Student Math Performance in Korea: Evidence from PISA 2022

Yijun Won

University of Wisconsin-Madison, United States of America

Parents' involvement in enrolling in advanced STEM programs: Is there a gender bias?

Yariv Feniger, Idit Fast, Yuval Badlin

Ben-Gurion University of the Negev, Israel

Communicative Elements of Parent-Daughter STEM Interest and Career Conversations

Elizabeth Dorrance Hall

Michigan State University, United States of America

Why do Modern-Orthodox Jewish Women Opt Out of STEM in Higher Education?

Shir Megiddo, Ortal Slobodin

Ben-Gurion University of the Negev, Israel

9:45am - 10:45am

156: Individual Papers - Math Motivation and Gender Differences

Location: Room 2.407 | 2

The influence of gender role orientations and self-concept on gender differences in interest in mathematics

Kim Heder¹, Ilka Wolter^{1,2}, Jan Lenhart²

¹Leibniz Institute for Educational Trajectories Bamberg; ²University of Bamberg

Math Anxiety and Attitudes Across Genders: Understanding Their Role in Study Program Choices

Maristella Lunardon¹, Christina Artemenko¹, Serena Rossi², Hans-Christoph Nürk¹, Krzysztof Cipora³

¹University of Tuebingen, Germany; ²Centre for Mathematical Cognition, Loughborough University, Loughborough, United Kingdom; ³Copernicus Center for Interdisciplinary Studies, Jagiellonian University in Cracow, Poland

Co-development of math and reading expectancy beliefs among dually high achieving adolescents

Yannan Gao, Noel Wytopil, Dan John, Ann-Kathin Jaggy, Ulrich Trautwein, Benjamin Nagengast

University of Tuebingen, Germany

The Asymmetric Effects of Norm-Referenced Feedback on Intrinsic Motivation in Mathematics: A Gender-Sensitive Experimental Investigation

Frederic Guay, Julien Bureau, Patricia Vohl, Edmond Yetongnon, Richard Bradet

Université Laval, Canada

9:45am - 10:45am

158: Individual Papers - Teaching Practices and Teacher Perspectives

Location: **Room 2.337 | 2**

Challenging Bias, Shaping Futures: Unpacking Gender in Teaching Practices

Eduarda Ferreira

Interdisciplinary Centre of Social Sciences (CICS.NOVA), NOVA FCSH, Portugal

Plan, teach, observe, reflect and refine: How Lesson Study helped secondary school teachers in creating a gender equitable physics lesson

Natascha Musters, Rian Aarts, Marije van Amelsvoort, Marc Swerts

Tilburg University, Netherlands, The

Is it more ok to exclude a girl (vs. a boy) from a STEM activity? Teachers' reactions to social exclusion among students

Hanna Weiß^{1,2}, Katharina Fink^{1,2}, Jeannine Grütter³, Hanna Beißert^{1,2,4}

¹DIPF | Leibniz Institute for Research and Information in Education, Frankfurt am Main, Germany; ²DeA-Center for Research on Individual Development and Adaptive Education of Children at Risk, Frankfurt am Main, Germany;

³Ludwigs-Maximilians University, Munich, Germany; ⁴Johann Wolfgang Goethe-University, Frankfurt am Main, Germany

10:45am - 11:15am

160: Coffee Break

Location: **Library Level Foyer | -1**

11:15am - 12:15pm 170: Individual Papers - STEM Teacher Education

Location: Room 1.003 | 1

Empowering Pre-Service Teachers Through the ACE Model: Integrating Mathematics and STEM for Meaningful Learning

Sasha Wang

Boise State University, United States of America

Gender, Location, and Attitudes to STEM education in the Australian Teacher Preparation Pipeline

Craig Sims, Rebecca Walker, David Treagust

Curtin University, Australia

Teaching Beyond the Binary: Effects of a Trans*-Sensitisation Intervention on Pre-Service STEM Teachers' Awareness

Anneke Steegh^{1,2}, Kaja Stürmer²

¹Leibniz Institute for Science and Mathematics Education, Germany; ²Leibniz University Hannover, Germany

Unmasking STEM Neutrality: Queer and Non-Normative Gender Identities in STEM Teacher Education

Chiara Holzhäuser^{1,2}, Anneke Steegh^{1,2}

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11:15am - 12:15pm 172: Individual Papers - Gender & STEM in Higher Education

Location: Room 1.004 | 1

Women, Education and an Engineering Career: A Mixed-Method Study of Young Women's Affinity for Engineering in years 10 and 12

Mellissa Hardtke¹, Leila Khanjaninejad², Noushin Nasiri¹, Candace Lang¹

¹Macquarie University, Australia; ²Transdisciplinary School, University of Technology Sydney, Sydney, NSW 2007, Australia

Key ingredients for gender inclusive active-learning in university STEM education

Oksana Kavatsyuk

University College Groningen, University of Groningen, The Netherlands

The role of Study Associations in fostering STEM career aspiration of female students

Oksana Kavatsyuk¹, Zulima Marti Cunat¹, Isabel Ferreras Gonzalez²

¹University College Groningen, University of Groningen, The Netherlands;

²Graduate School of Quantum Technologies, Université Paris Cité, France

The development of expectations and values of international (STEM) students over the study course: Socio-demographic differences from an intersectional perspective

Judith Sarah Preuß, Julia Zimmermann, Kathrin Jonkmann

FernUniversität in Hagen, Germany

11:15am - 12:15pm 174: Individual Papers - Policy and Society

Location: Room 1.005 | 1

Inclusion in Engineering and Technology in Aotearoa New Zealand: Perceived Impacts of the U.S. Diversity Equity and Inclusion Policy.

Kelly Blincoe, Priyanka Dhopade, Penelope WATSON

The University of Auckland, New Zealand

Shifting the Numbers Game: Developing and Augmenting Safe and Inclusive Construction and Infrastructure Sectors for all

Suzette Dyer², Kylie Taffard¹

¹University of Canterbury, New Zealand; ²University of Waikato, New Zealand

CAPTURING PROGRESSION OF THE INTEGRATION OF GENDER AND INCLUSIVENESS IN TECHNICAL SCHOOLS: IDENTIFYING GENDER DISPARITIES IN STEM AND PROGRESSION OPPORTUNITIES.

Vivian Vimarlund, Malin Wiger

Linköpings universitet, Sweden

Fostering gender and intersectional equality in rural areas through educational ecosystems

Henriette Bertram, Anne Geese

TU Braunschweig, Germany

11:15am - 12:15pm 176: Individual Papers - Gender in Academic STEM Careers

Location: Room 2.407 | 2

She is Waiting at the Ladder: Gendered Delay in Promotion in Indian Academia

Sisir Debnath, Ravinder Kaur

Indian Institute of Technology Delhi, India

Skirting the Line: Gendered Professionalism and the Unspoken Rules of Campus Life

Venus Skowronski

Florida State University, United States of America

Gender differences in the association between spousal support and attitudes toward career among STEM researchers in Japan.

Sayaka Shinohara

Aichi Shukutoku University, Japan

Supporting Women in Mathematics Doctoral Programs: The Case of Two International Women of Color in the United States

Brandi Whiteman

Oregon State University, United States of America

11:15am - 12:15pm **178: Individual Papers - Discrimination and Harassment in STEM**

Location: **Room 2.337 | 2**

Invisible Barriers, Visible Impact: The Consequences of Discrimination on Women's Engagement & Motivation in STEM

Meeta Banerjee

University of South Carolina, United States of America

Designing Authentic Assessments to Promote Girls' STEM Literacy, Interest, and Self-Efficacy

Kim Koh, Olive Chapman

University of Calgary, Canada

Cultural Values, Gender, and Data Literacy: Insights from Early-Career STEM Professionals

Victoria Nguyen, Guadalupe Rosas

University of California, Irvine, United States of America

Sexual Harassment Experiences and Climate Perceptions of Doctoral Engineering Students in the US

Nicole Else-Quest¹, Julie Aldridge²

¹University of California, Los Angeles, California, United States of America; ²The Ohio State University, Columbus, Ohio, United States of America

11:15am - 12:15pm **179: Individual Papers - Gender in Computer Science**

Location: **Room 2.206 | 2**

Sense of Belonging, equity and the reduction of gender segregation in technical and computer science studies

Daniel Gysin¹, Peter Rigert², Dorothee Brovelli¹

¹Pädagogische Hochschule Luzern, Switzerland; ²PH FHNW, Switzerland

Different Worlds? Diverging Perspectives of Students and Teachers on CS-Education

Juliane Siegeris, Katharina Simbeck

HTW Berlin, Germany

Fostering Sense of Belonging in Computer Science – A Lecturer Perspective

Katja Wengler

Cooperate State Universiyt Baden-Wuerttemberg, Germany

12:15pm - 1:45pm **180: Lunch**

12:15pm - 1:45pm **182: Early-/Mid-Career Networking Event**

Location: **Room 1.006 & 1.007 | 1**

This informal networking event offers early- and mid-career researchers the opportunity to exchange ideas, meet peers, and build lateral connections across disciplines and institutions. Over coffee, participants can share experiences, discuss common challenges, and explore opportunities for collaboration in a relaxed setting.

1:45pm - 3:15pm

190: Tandem Talk

Location: **E.001 | Main Lecture Hall | 0**

Hanna Gaspard

Professor of Educational Data Science / Learning & Instruction, University of Konstanz Germany)

Judith Harackiewicz

Professor of Psychology, University of Wisconsin–Madison (USA)

Utility Value Interventions: Theoretical Underpinnings, Evidence from Prior Studies, and Remaining Questions

Many students struggle to see the value in what they are learning. Grounded in expectancy-value theory, utility value interventions (UVIs) have been developed to help students see the value in class material and have shown great potential to foster students' motivation and achievement, particularly in the field of science, technology, engineering, and mathematics (Hulleman & Harackiewicz, 2021). Judith Harackiewicz will discuss recent studies testing a new version of the UVI, aimed at helping students appreciate the prosocial value of course topics, in addition to personal value, compared with the "standard" UVI that emphasizes personal values, with students in introductory chemistry classes. Her team has been testing this new prosocial UVI at three different universities across the US (with diverse student populations) and results reveal considerable treatment heterogeneity, both between the different versions of the UVI (e.g., the prosocial UVI has proven particularly effective for first-generation students in some contexts) and across universities. Considered across studies, these recent results suggest more complex understandings of UVI effects across contexts. Hanna Gaspard will present evidence from two large cluster-randomized trials in mathematics secondary classrooms. In these studies, she could show that students' motivation and achievement can be fostered through a 90-min UVI until 5 months later. When the intervention was implemented by trained master's students or the regular math teachers instead of researchers, thus testing the effectiveness of the intervention under conditions closer to educational practice, however, only some of the positive effects could be replicated and the overall effect pattern was rather mixed. In her current work, Dr. Gaspard therefore aims to test whether personalizing UVIs can help to make them more effective. Following their individual presentations, Judith Harackiewicz and Hanna Gaspard will engage in a joint discussion of remaining questions related to these interventions for research and practice.

3:15pm - 3:45pm

200: Coffee Break

Location: **Library Level Foyer | -1**

3:45pm - 5:15pm

210: Symposium - Multi-Perspective Approaches to Girls in STEM

Location: Room 2.407 | 2

Connecting Approaches: Multi-Perspective Research on Promoting Girls in STEM

Chair(s): **Heidrun Stoeger** (University of Regensburg, Germany), **Claudia Uebler** (University of Regensburg, Germany)

Discussant(s): **Elena Makarova** (University of Basel, Switzerland)

Presentations of the Symposium

Linking Out-of-School Online Mentoring and In-School STEM Clubs to Support Girls in STEM: An Effectiveness Study

Claudia Uebler¹, Sonja Bayer¹, Kathrin J. Emmerdinger¹, Albert Ziegler², Heidrun Stoeger¹

¹University of Regensburg, Germany, ²University of Erlangen-Nuremberg, Germany

Closing Gender Gaps through Cooperation: First Findings from the FösaMINT Study

Brigitte Merz¹, Albert Ziegler¹, Heidrun Stoeger², Anne Forche², Lukas Graber², Johanna Pfeuffer¹, Lukas Ketscher¹

¹University of Erlangen-Nuremberg, Germany, ²University of Regensburg, Germany

Strengthening Gender-Sensitivity in STEM Networks: Institutional Engagement of Out-of-School STEM Education Providers and the Role of School Partnership Orientation

Michael Heilemann¹, Susanne Schober¹, Albert Ziegler², Heidrun Stoeger¹

¹University of Regensburg, Germany, ²University of Erlangen-Nuremberg, Germany

Promoting girls in STEM: Bridging the gap between research and practice

Diana Wengler¹, Katrin Koellnberger¹, Charlotte Popp², Fabian Heller¹, Maryam Shiani², Albert Ziegler², Heidrun Stoeger¹

¹University of Regensburg, Germany, ²University of Erlangen-Nuremberg, Germany

3:45pm - 5:15pm

211: Symposium - Gendered STEM Higher Education in India

Location: Room 2.337 | 2

Interrogating Gendered Contexts of STEM Higher Education in India: Insights from Across Disciplines

Chair(s): **Ravinder Kaur** (Indian Institute of Technology Delhi, India, India),
Taanya Kapoor (Oxford University)

Discussant(s): **Prajval Shastri** (International Centre for Radio Astronomy Research)

Presentations of the Symposium

Does negative marking lead to gendered exam-taking behavior? Experimental evidence from India

Nandana Sengupta¹, Swati Sharma², Sumitava Mukherjee¹

¹Indian Institute of Technology Delhi, ²IGDR

Unseen Barriers: Gendered Microaggressions in Indian STEM Higher Education

Sucharita Maji, Vidushi Razdan

Indian Institute of Technology (Indian School of Mines) Dhanbad

Visible Infrastructures, Invisible Inequalities: Gender and Space in An Engineering College in India

Ravinder Kaur¹, Khusdeep Kaur Malhotra², Nandana Sengupta¹

¹Indian Institute of Technology Delhi, ²Ahmedabad University

Gendered Pathways in Indian Engineering: Education, Labour and Socio-Economic Considerations

Odile Henry¹, Pradeep Choudhury², Yogita Suresh³

¹Centre de Sciences Humaines, Delhi, ²Jawaharlal Nehru University, ³Shiv Nadar Institute of Eminence

3:45pm - 5:15pm

212: Symposium - Girls and Women in STEM: Barriers and Interventions

Location: Room 1.003 | 1

Empowering Girls and Women in STEM: Barriers, Interventions, and Global Perspectives

Chair(s): **Elena Makarova** (University of Basel)

Discussant(s): **Katja Driesel-Lange** (University of Münster)

Presentations of the Symposium

From Drawings to Dreams? Kindergarten Children's Images of Scientists, Role Models, and Careers in STEM

Jana Lindner¹, Marlene Labude², Susanne Metzger², Elena Makarova¹

¹University of Basel, ²University of Basel and FHNW School of Education

Born or Made? How Children's Science Biographies Frame Scientific Ability and Interest

Jessica R. Gladstone¹, Gabrielle Applebaum², Andrei Cimpian³

¹University of Illinois, ²Yeshiva University, ³New York University

Shaping STEM pathways through a female role model intervention

Milagros Sáinz¹, Susana Gonzalez², Beatriz López¹

¹Universitat Oberta de Catalunya, ²Universidad CEU San Pablo

Building Cybersecurity Capacity and Empowering Women Civil Society in the Asia-Pacific

Jaimee Stuart

United Nations University Institute Macau

3:45pm - 5:15pm

213: Symposium - Inclusive Climate in Academic STEM

Location: **Room 1.004 | 1**

Inclusive Climate in Academic STEM: A Multilevel Approach to the Experiences of Women and Gender Minorities

Chair(s): **R. Josiah Rosario** (University of Michigan, United States of America),

Isis Settles (University of Michigan)

Discussant(s): **Dawn Culpepper** (University of Maryland)

Presentations of the Symposium

Heartbreak in Academia: An intersectional analysis of doctoral students' and postdocs' experiences with Advisors, P.I.'s and Research Groups

Danielle Parra¹, Leslie D. Gonzales², Yoneri Bueno-Diaz²

¹University of Michigan, ²University of Arizona

Challenging Diversity Misconceptions: Department Diversity Climate Improves Job Outcomes across Faculty Race and Gender

Eun Ju Son¹, Isis Settles¹, Martinque Jones², NiCole Buchanan³, Kristie Dotson¹

¹University of Michigan, ²University of North Texas, ³Michigan State University

Professional Cultures and the Reproduction of Inequality In STEM

Erin A. Cech, R. Josiah Rosario

University of Michigan

Perceptions of Authorship Climate by Women in Academic STEM

Georgina Montgomery¹, Kevin Elliott¹, Kendra Spence-Cheruvilil¹, R. Josiah Rosario²

¹Michigan State University, ²University of Michigan

3:45pm - 5:15pm

215: Individual Papers - Gendered Career Choices

Location: Room 1.005 | 1

Gender-atypical vocational training: Employment trajectories of women in STEM

Pia Wagner, Lisa Fournier

Federal Institute for Vocational Education and Training (BIBB), Germany

Pathways into professional careers: The role of gender, learning experiences, individual preferences and choice

Ingrid Schoon, Andrew Jenkins, Anna Yong

University College London, United Kingdom

Self-Expression or Salary? Social Class and Gendered Career Trajectories

Lukas Arnold¹, Wilfred Uunk¹, Brigitte Schels²

¹University of Innsbruck, Austria; ²University of Salzburg, Austria

Seeing Women in Tech: How Female Representation in Digitalization Occupations Shapes Girls' Training Choices in Local Labor Markets

Timon Drewes

Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany

Development and Validation of the Motivations for Career Choice Scale: Illustrated Empirically for Adolescents' Aspired STEM Careers in Australia and Germany

Helen M. G. Watt¹, Rebecca Lazarides², Ricarda Steinmayr³, Paul W. Richardson⁴

¹University of Sydney, Australia; ²University of Potsdam, Germany; ³TU Dortmund, Germany; ⁴Monash University, Australia

3:45pm - 5:15pm

217: Individual Papers - Identity and Belonging in STEM

Location: Room 2.206 | 2

Gender and Belonging in Science among Vocational-track Secondary School Students

Marie-Claire Shanahan

University of Calgary, Canada

Identity Formation of Precollege Women in Quantum Information Science and Technology

Angela Kelly¹, Michele Darienzo^{1,2}

¹Stony Brook University, United States of America; ²Brookhaven National Laboratory, United States of America

Building spaces for belonging: Youth perceptions of gender in construction environments

Anna Keune, Živa Simšič

Technical University of Munich, Germany

Building Belonging: Arts-Based Construction to Foster Inclusion in STEM for Young Learners

Harper Staples, Anna Keune

Technical University of Munich, Germany

5:15pm - 5:30pm

220: Room Change

5:30pm - 7:00pm

230: Network Meeting & Book Presentation & Closing

Location: E.001 | Main Lecture Hall | 0

Book Presentation

Prof. Dr. Jacquelynne S. Eccles and Prof. Dr. Allan Wigfield will present key insights from their latest book, currently in press:

Eccles, J. S., Wigfield, A., Simpkins, S., & Lauermaun, F. (in press). *Motivation, achievement, and situated expectancy value theory: Making one's future*. New York: Guilford Press.

Over the last 40+ years, Eccles and colleagues' expectancy-value theory of choice and achievement has provided a theoretical basis for research on why people make the choices they make and do what they do academically, for careers, and in their leisure time (e.g., sports, reading). For the first time in one place the authors provide a detailed description of the model, how they developed it, and why Eccles and Wigfield changed the name to **situated expectancy value theory** in 2020. They also discuss research from all over the world based in the model and provide many suggestions for future research to guide the next decade's work. A unique feature of the book is its **autobiographical approach**. In addition to describing the developmental journey of the model, the authors describe their intellectual journeys, how they began to work together, and in the case of Eccles and Wigfield, how they have sustained their partnership for 45 years.