

# YE TAO 陶冶

MEER.org (Mirrors for Earth's Energy Rebalancing)  
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I tackle global health care challenges through rigorous experimentation enabled by custom instrumentation, new measurement techniques, fabrication technologies, hybrid materials, sustainable architecture, and paradigm shifts. I strive to maintain human habitat by alleviating the symptoms and addressing the root causes of anthropogenic global warming using a multi-pronged engineering framework combining cutting-edge material science concepts with commonplace polymers and renewable biological materials to build scalable functional devices, systems, and infrastructures.

## PROFESSIONAL APPOINTMENT

FOUNDER and EXECUTIVE DIRECTOR (MEER.org) Climate adaptation and thermal mitigation field projects and lecture tours	Global with an African Focus 2020-present
Principal Investigator (PI) (Rowland Institute at Harvard) PI of the Laboratory for Device Engineering for '3D AFM'	Cambridge MA September 2016-September 2021
DOCTORAL STUDENT (ETH Zürich) Christian Degen Group, Department of Physics	Zürich Switzerland August 2011-August 2016
GRADUATE RESEARCH ASSISTANT (Massachusetts Institute of Technology) Christian Degen Group, Department of Chemistry	Cambridge MA September 2009-September 2015
UNDERGRADUATE RESEARCH ASSISTANT (Harvard University) Eric Jacobsen Group, Department of Chemistry and Chemical Biology	Cambridge MA November 2005-September 2009
RESEARCH ASSISTANT (Concordia University) Louis Cuccia Group, Department of Chemistry and Biochemistry	Montréal QC May 2005-August 2005

## DEGREES AND THESES

DOCTOR OF PHILOSOPHY (Physical Chemistry, Massachusetts Institute of Technology) Thesis: Nanomechanical Systems with Small Dissipation	Cambridge MA September 2015
MASTER OF SCIENCE (Physical Chemistry, Massachusetts Institute of Technology) Thesis: Fundamental Efforts for Improving the Sensitivity of Magnetic Resonance Force Microscopy	Cambridge MA July 2011
BACHELOR OF SCIENCE (Biochemistry, Harvard University) Thesis: Molecular Dipoles in Non-Polar Solvent: A Mechanistic Investigation of Complexation Phenomena and Selectivity in Asymmetric Urea-Super Acid Cocatalysis	Cambridge MA June 2009

## PUBLICATIONS

## ADDRESSING THE URGENT NEED FOR DIRECT CLIMATE COOLING: RATIONALE AND OPTIONS

R. Baiman, S. Clarke, C. Elsworth, L. Field, M. MacCracken, J. Macdonald, D. Mitchell, F. D. Oeste, S. Reed, S. Salter, H. Simmens, **Ye Tao**, R. Tulip

(Equal contribution by consortium of international experts listed alphabetically by last name.)

*Oxford Open Climate Change* **4**, kgae014 (2024)

## AN OPEN LETTER TO THE IMO SUPPORTING MARITIME TRANSPORT THAT COOLS THE ATMOSPHERE WHILE PRESERVING AIR QUALITY BENEFIT

R. Baiman, R. Bishop, C. Elsworth, A. Gadian, B. Melton, O. Petersen, **Ye Tao**

(Equal contribution by consortium of international experts listed alphabetically by last name.)

*Oxford Open Climate Change* **4**, kgae008 (2024)

## SPATIAL CORRELATION BETWEEN FLUCTUATING AND STATIC FIELDS OVER METAL AND DIELECTRIC SUBSTRATES

M. Hérítier, R. Pachlatko, **Ye Tao**, J. M. Abendroth, C. L. Degen, and A. Eichler

*Phys. Rev. Lett.* **127**, 216101 (2021)

## FORGING ASPIRANT UNDERGRADUATE SCIENTISTS AND ENGINEERS INTO STELLAR RESEARCHERS

**Ye Tao** (Corresponding author)

*Matter* **3**, 1383-1386 (2020)

## A ROBUST METAL OXIDE THIN FILM WITH CRYOGENIC SATURATION MAGNETIZATION EXCEEDING 2 TESLA

K. Trepka, R. Hauert, C. Cancellieri, and **Ye Tao** (Corresponding author)

*Matter* **3**, 1263-1274 (2020)

## MAGNETIC CHARACTERIZATION OF RARE-EARTH OXIDE NANOPARTICLES

K. Trepka and **Ye Tao** (Corresponding author)

*Appl. Phys. Lett.* **117**, 122410 (2020)

## NANOLADDER CANTILEVERS MADE FROM DIAMOND AND SILICON

M. Hérítier, A. Eichler, Y. Pan, U. Grob, I. Shorubalko, M. D. Krass, **Ye Tao** (Co-corresponding author), and C. L. Degen

*Nano Lett.* **18**, 1814-1818 (2018)

## WAFER-SCALE PHOTOLITHOGRAPHY OF ULTRA-SENSITIVE NANOCANTILEVER FORCE SENSORS

Y. Pan and **Ye Tao** (Corresponding author)

*Appl. Phys. Lett.* **113**, 083103 (2018)

GROWTH OF MAGNETIC NANOWIRES ALONG FREELY SELECTABLE  $\langle hkl \rangle$  CRYSTAL DIRECTIONS

**Ye Tao** (Corresponding author) and C. L. Degen

*Nat. Commun.* **9**, Article number: 339 (2018)

Feature Article in ***Metallurgy Collection***

## EXCLUSIVELY GAS-PHASE PASSIVATION OF NATIVE OXIDE-FREE SILICON(100) AND SILICON(111) SURFACES

**Ye Tao** (Corresponding author), R. Hauert, and C. L. Degen

*ACS Appl. Mater. Interfaces* **8**, 13157-13165 (2016)

## SURFACE CHEMICAL TUNING OF PHONON AND ELECTRON TRANSPORT IN FREE-STANDING SILICON NANOWIRE ARRAYS

Y. Pan, **Ye Tao**, G. Qin, Y. Fedoryshyn, S. N. Raja, M. Hu, C. L. Degen, and D. Poulidakos

*Nano Lett.* **16**, 6364-6370 (2016)

## ULTRASENSITIVE MECHANICAL DETECTION OF MAGNETIC MOMENT USING A COMMERCIAL DISK DRIVE WRITE HEAD

**Ye Tao**, A. Eichler, T. Holzherr, and C. L. Degen

*Nat. Commun.* **7**, Article number: 12714 (2016)

## MAGNETOMETRY OF INDIVIDUAL POLYCRYSTALLINE FERROMAGNETIC NANOWIRES

N. Shamsudhin, **Ye Tao** (Equal-contribution with N. Shamsudhin), J. Sort, B. Jang, C. L. Degen, B. J. Nelson, and Salvador Pané

*Small* **12**, 6363-6369 (2016)

## ACCELERATED NANOSCALE MAGNETIC RESONANCE IMAGING THROUGH PHASE MULTIPLEXING

B. A. Moores, A. Eichler, **Ye Tao**, H. Takahashi, P. Navaretti, and C. L. Degen

*Appl. Phys. Lett.* **106**, 213101 (2015)

Article featured by **American Institute of Physics**

## PERMANENT REDUCTION OF DISSIPATION IN NANOMECHANICAL Si RESONATORS BY CHEMICAL SURFACE PROTECTION

**Ye Tao**, P. Navaretti, R. Hauert, U. Grob, M. Poggio, and C. L. Degen

*Nanotechnology* **26**, 465501 (2015)

Feature Article in ***Nanotechnology Select*** with **Interview**

## SINGLE-CRYSTAL DIAMOND NANOWIRE TIPS FOR ULTRASENSITIVE FORCE MICROSCOPY

**Ye Tao** and C. L. Degen

*Nano Lett.* **15**, 7893-7897 (2015)

SINGLE-CRYSTAL DIAMOND NANOMECHANICAL RESONATORS WITH QUALITY FACTORS EXCEEDING ONE MILLION

**Ye Tao**, J. Boss, B. A. Moores, and C. L. Degen  
*Nat. Commun.* **5**, Article number: 3638 (2014)

FACILE FABRICATION OF SINGLE-CRYSTAL-DIAMOND NANOSTRUCTURES WITH ULTRAHIGH ASPECT RATIO

**Ye Tao** and C. L. Degen  
*Adv. Mater.* **25**, 3962-3967 (2013)

NEGATIVELY CHARGED NITROGEN-VACANCY CENTERS IN A 5 nm THIN  $^{12}\text{C}$  DIAMOND FILM

K. Ohashi, T. Roskopf, H. Watanabe, M. Loretz, **Ye Tao**, R. Hauert, S. Tomizawa, T. Ishikawa, J. Ishi-Hayasee, S. Shikata, Christian L. Degen, and K. M. Itoh  
*Nano Lett.* **13**, 4733-4738 (2013)

SPIN PROPERTIES OF VERY SHALLOW NITROGEN VACANCY DEFECTS IN DIAMOND

B. K. Ofori-Okai, S. Pezzagna, K. Chang, M. Loretz, R. Schirhagl, **Ye Tao**, B. A. Moores, K. Groot-Berning, J. Meijer, and C. L. Degen  
*Phys. Rev. B* **86**, 081406(R) (2012)

MIRROR SYMMETRY BREAKING AND CHIRAL AMPLIFICATION IN FOLDAMER-BASED SUPRAMOLECULAR HELICAL AGGREGATES

S. Azeroual, J. Surprenant, T. D. Lazzara, M. Kocun, **Ye Tao**, L. A. Cuccia, and J.-M. Lehn  
*Chem. Commun.* **48**, 2292-2294 (2012)

ASYMMETRIC COOPERATIVE CATALYSIS OF STRONG BRØNSTED ACID-PROMOTED REACTIONS USING CHIRAL UREAS

H. Xu, S. J. Zuend, M. G. Woll, **Ye Tao**, E. N. Jacobsen  
*Science* **327**, 986-990 (2010)

COMPLETE ASYMMETRIC AMPLIFICATION OF ETHYLENEDIAMMONIUM SULFATE USING AN ABRASION/GRINDING TECHNIQUE

P. S. M. Cheung, J. Gagnon, J. Surprenant, **Ye Tao**, H. Xu, and L. A. Cuccia  
*Chem. Commun.*, 987-989 (2008)

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**SELECTED PUBLIC RECOGNITION AND PRESS COVERAGE**

THE INDEPENDENT CLIMATE 100 LIST 2024

September 22, 2024

The British national newspaper The Independent featured Dr Ye Tao on its inaugural Climate 100 List for 2024, recognizing his contributions to climate change solutions. As the READER'S CHOICE, Dr Tao won a spot along side world dignitaries (including the UN Secretary General António Guterres, former US President Joe Biden, King Charles III and Prince William, the former prime minister of Singapore Lee Hsien Loong), earth system scientists (Dr Michael Mann, Dr Peter Davis, Dr Britney Schmidt, Dr Geoffrey Hawtin, and Dr Cary Fowl), celebrities (Bill Gates, Michael Bloomberg, Elon Musk), and celebrities climate activists (Leonardo DiCaprio, Sir David Attenborough, Dr Jane Goodall, Greta Thunberg, Bill McKibben, former US vice-President Al Gore).

*"He was the person nominated the most times by our readers, who described him as a 'true unsung climate hero' for dedicating his work to some of the most pressing issues of our time."- The Independent*

THE GUARDIAN

Aug 16, 2024

British daily news paper The Guardian covered MEER's work in Sierra Leone and cooling impacts up to 6 degrees Celcius on local residents in an article entitled 'Now you can have rest in your home': the mirror roofs cooling homes in Freetown

NEW SCIENTIST

June 3, 2023

Popular science magazine New Scientist covered Dr. Ye Tao's scientific humanitarian project in Freetown Sierra Leone in an article entitled "City in Sierra Leone covers buildings in mirrors to fight extreme heat".

12NEWS

Jun 20, 2022

TV station 12NEWS serving the Phoenix Arizona area in the US covered MEER.org's research activities in California and New Hampshire, USA, in a program entitled "Nonprofit using mirrors as climate solution to cool farms, homes, looking for Arizona volunteers".

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## SELECTED INVITED TALKS

### SOLAR CLIMATE INTERVENTION VIRTUAL SYMPOSIUM

Sept 25, 2024

Dr. Ye Tao was invited to speak at Session 12 of an online symposium organized by the University Corporation of Atmospheric Research (UCAR), "a nonprofit consortium of more than 130 North American colleges and universities focused on research and training in Earth system science" and "the experienced managers of the National Center for Atmospheric Research (NCAR) on behalf of the U.S. National Science Foundation (NSF)."

### HARDWARE TO SAVE A PLANET PODCAST

JULY 18, 2024

Dr. Ye Tao joins EPISODE 57 of this technology podcast.

### ELECTRIFY NOW

March 17, 2023

Electrify Now is a volunteer organization in the United States devoted to communicating the benefits of electrification as a potent strategy to combat the climate crisis. The organization invites Dr. Tao for a webinar.

### CONGRESO FUTURO 2023

JAN 16, 2023

Congreso Futuro is an annual public intellectual event organised by the Senate of Chile through the Commission for the Challenges of the Future, the Chamber of Deputies, the Fundaci'şn Encuentros del Futuro, the Chilean Academy of Sciences, and universities across the country. It is broadcast live widely across Latin America and viewed by audiences around the world. In his presentation "What Inspires Us," Dr. Tao talks about creating a civilization that balances opportunity, happiness, and ecological sustainability.

### COP27 PRESS CONFERENCE

November 9, 2022

At this year's event in Egypt, Dr. Tao collaborates with renowned sustainability professor Jem Bendell to critically examine the paradox of global dimming effects due to pollution and the challenges of achieving net-zero emissions, advocating for a more honest and science-driven dialogue on climate impacts.

### VOLTS PODCAST

June 8, 2022

Dr. Ye Tao on a grand scheme to cool the Earth. The VOLTS Podcast is an influential US program on energy transition and the climate crisis. In this episode, Dr. Ye Tao discusses his vision for combatting climate change by using fields of mirrors that reflect solar radiation.

### PLANET CRITICAL PODCAST

March 25, 2022

Buying Time with Dr. Ye Tao - Planet Critical. Dr. Tao discusses the concept of geoengineering as a temporary measure to mitigate the effects of climate change, focusing on innovative approaches and the urgent need for action.

### EXTINCTION REBELLION

November 23, 2021

Clare Farrell, a leader of Extinction Rebellion, interviews Dr. Ye Tao. Extinction Rebellion is the world's most robust social movement demanding urgent revolutionary action from governments and citizens to take charge of halting the

climate crisis. Dr. Tao shares insights on founding MEER to address the dire consequences of climate change and his commitment to sustainable research and solutions.

COP26 PRESS CONFERENCE November, 2021

At this year's event in Glasgow, Dr. Tao collaborates with renowned arctic climate scientist Prof. Peter Wadhams to critically examine the need to move away from a consumeristic economic model that legalizes irrational practices such as planned obsolescence, and the demanding energy efficiency of climate-relevant cooling interventions.

MIRRORS FOR EARTH'S ENERGY REBALANCING (MEER:ReflEction)  
6<sup>th</sup> NANO Boston Conference, Online December, 2020

MIRRORS FOR EARTH'S ENERGY REBALANCING  
2020 International Symposium on Water, Ecology and Environment, Online December, 2020

FROM AN ATOMIC-RESOLUTION MILL TO A NEW ENGINEERING SOLUTION FOR THE CLIMATE CRISIS  
Single-Molecule Sensors and NanoSystems Internation Conference, Online November, 2020  
Plenareno Material Science & Nanotechnology Webinar, Online November, 2020  
Center for Energy Research, Weizmann Institute of Science, Israel (COVID19 Cancellation) April, 2020

MIRRORS FOR EARTH'S ENERGY REBALANCING (MEER:ReflEction)  
NanoScientific Symposium (Conference), SUNY Polytechnic Institute, Albany, USA November, 2019

TOWARD THE MAGNETOMETRY OF A SINGLE-MOLECULE-SIZED MAGNET  
Magnetic Control of Ion Channels (Workshop), Janelia Research Campus, USA February, 2019

ANALYTICAL INSTRUMENTATION AT THE NANOMETER SCALE  
Department of Mechanical Engineering, Technical University of Denmark, Copenhagen, Denmark November, 2018

LEARNING IN FUNDAMENTAL ATOMISTIC PROCESSES USING SUSPENDED SILICON NANOWIRES  
NanoScientific Symposium (Conference), UNY Polytechnic Institute, Albany, USA September, 2018

ANALYTICAL INSTRUMENTATION AT THE NANOMETER SCALE  
Department of Chemistry and Biochemistry, Concordia University, Montréal, Canada September, 2018

EXPANDING THE FRONTIERS OF MAGNETIC SENSING BY NANOSCALE ENGINEERING AT THE EXTREMES  
Fraunhofer Institute, Freiburg, Germany May, 2018

SINGLE-CRYSTALLINE FeCo NANOWIRES AS ULTRA-HIGH MAGNETIC GRADIENT SOURCES  
SpinMechanics5 and NanoMRI6 (Conference), Les Houches, France February, 2018

TOWARD A 3-DIMENSIONAL ATOMIC RESOLUTION MICROSCOPE

Mount Sinai Hospital, New York City, USA	May, 2017
COMPLETE CRYSTAL-ORIENTATION CONTROL OF FeCo NANOWIRES FOR NanoMRI Institute of Technological Sciences, Wuhan University, Wuhan, China	December, 2017
ULTRASENSITIVE MECHANICAL MAGNETOMETRY Physics Department and School of Engineering and Applied Sciences, Harvard, Cambridge, USA	May, 2017
MULTIDISCIPLINARY ENGINEERING FOR ULTRASENSITIVE MECHANICAL MAGNETOMETRY IMP Vienna Biocenter, Vienna, Austria	April, 2017
ATOMIC-RESOLUTION MAGNETIC RESONANCE IMAGING VIA NANOMECHANICS Center for Nano and Micro Mechanics, Tsinghua University, Beijing, China	December 2015
SURFACE ENGINEERING FOR HIGH-Q NANOMECHANICAL RESONATORS Department of Physics, University of Konstanz, Konstanz, Germany	December 2015
SINGLE-CRYSTAL DIAMOND NANOLITHOGRAPHY QDiamond2013 (Conference), Huangshan, China	October 2013
ULTRA-HIGH QUALITY FACTOR SINGLE-CRYSTAL DIAMOND NANORESONATOR Swiss National Center of Competence in Research Quantum Science and Information Technology (Monthly Seminar) Zürich, Switzerland	September 2013
MECHANICAL DISSIPATION IN SUB-MICRON-THICK SINGLE-CRYSTAL DIAMOND CANTILEVERS 4 <sup>th</sup> nanoMRI Conference, Monte Verità, Ticino, Switzerland	July 2012
<b>CONTRIBUTED ACADEMIC TALKS AND TALKS FOR THE GENERAL PUBLIC</b>	
SOLAR RADIATION MANAGEMENT: HAS IT BECOME NECESSARY? Corona Healers Education and Solutions Summit, online from Cambridge, USA	April, 2020
MIRRORS FOR EARTH'S ENERGY REBALANCING The 2 <sup>nd</sup> Annual Long Now Boston Flashtalks, Cambridge, USA	January, 2020
MIRRORS FOR EARTH'S ENERGY REBALANCING APS New England Section Meeting, Warwick, Rhode Island, USA	October, 2019
MAGNETOMETRY AT THE SINGLE-MOLECULE LENGTH SCALE Gordon Research Conference, West Dover, Vermont, USA	July, 2018
NANOWIRE GROWTH ALONG ARBITRARY DESIGN $\langle hkl \rangle$ DIRECTIONS	

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APS New England Section Meeting, Boston, USA	March, 2018
TOTAL CONTROL OF NANOWIRE CRYSTAL ORIENTATION The 2016 MaP Graduate Symposium, Zürich, Switzerland	June, 2016
SINGLE-CRYSTAL DIAMOND NANOLITHOGRAPHY The 2014 MaP Graduate Symposium, Zürich, Switzerland	June, 2014

## PATENTS

ELECTRON-BEAM MACHINING WITH SUB-ATOMIC DEPTH RESOLUTION Serial No.: 62/936,933	U.S. Provisional Application November 18, 2019
DEMONSTRATION OF EPITAXY WITH SUPRA-ATOMIC-RESOLUTION DATA Serial No. 62/936,997	U.S. Provisional Application November 18, 2019
MECHANICAL METAMATERIAL FOR SCANNING FORCE MICROSCOPY SENSORS Serial No. 62/937,080	U.S. Provisional Application November 18, 2019

## RESEARCH HIGHLIGHTS

ATOMIC DEPTH PRECISION MACHINING US provisional patent (SN: 62/936,933).	Rowland Institute at Harvard
A GENERAL METHOD TO PICKUP AND HANDLE NANOPARTICLES submitted, 2020	Rowland Institute at Harvard
WORLD RECORD: MOST MAGNETIC METAL OXIDES <i>Matter</i> , 2020. <i>APL</i> , 2020.	Rowland Institute at Harvard
WORLD RECORD: SENSITIVE SCANNING FORCE SENSORS <i>Nano Letters</i> , 2018	Rowland Institute at Harvard and ETH Zürich
SYNTHESIZE NANOWIRES IN ANY DESIGN CRYSTAL ORIENTATION <i>Nature Communications</i> , 2018	Rowland Institute at Harvard and ETH Zürich
GAS-PHASE SURFACE PROCESSING ADVANCES MECHANICS & THERMOELECTRICS <i>Nano Letters</i> , 2016. <i>ACS Appl. Mater. Interfaces</i> , 2015. <i>Nanotechnology</i> , 2016.	ETH Zürich
IMAGING A HARDDRIVE WRITE POLE FIELD AT 0.03-ELECTRON MOMENT SENSITIVITY <i>Nature Communications</i> , 2016	ETH Zürich
SINGLE-CRYSTAL DIAMOND NANOWIRE SCANNING TIP <i>Nano Letters</i> , 2015	ETH Zürich
SINGLE-CRYSTAL DIAMOND NANOMECHANICAL RESONATORS <i>Nature Communications</i> , 2014. <i>Advanced Materials</i> , 2013	ETH Zürich
MECHANISTIC ELUCIDATION OF HETEROGENEOUS REACTION PROCESSES <i>Science</i> , 2010. <i>Chemical Communications</i> , 2010	Harvard University Concordia University

## EXPERIENCE AS RESEARCH AND THESIS ADVISOR

Victoria Zhang	Undergraduate	Harvard College	since October 2020
Erik Schreiner	Undergraduate	Harvard College	since October 2020
Will Dey	Undergraduate	Harvard College	since September 2020
Soy Choi	Undergraduate	Harvard College	since June 2020
Laya Pothunuri	Undergraduate	Nanyang Technological University	since February 2020
Hoa Thanh Le	Postdoc	Rowland Institute at Harvard	since March 2019
Leo Sifringer	Master's Student	Rowland Institute at Harvard-ETH	March 2019-February 2020
Fanny Hiebel	Postdoc	Rowland Institute at Harvard	since July 2019
Kai Trepka	Undergraduate	Harvard College	2017-2020
Ying Pan	Postdoc	Rowland Institute at Harvard	2017-2018
Cal Miller	Undergraduate	Harvard College	2016-2018
Jens Boss	Undergraduate	ETH Zürich	Semester work 2012

## TEACHING EXPERIENCES

COURSE-BASED RESEARCH	CHEM 165	Harvard University	Spring 2018
ADVANCED PHYSICS LAB	Superconductivity	ETH ZÜRICH	2015-2016
ADVANCED PHYSICS LAB	Josephson Effect	ETH ZÜRICH	2012-2015
ORGANIC CHEMISTRY	Course: 5.12	Massachusetts Institute of Technology	Spring 2010
GENERAL CHEMISTRY	Course: 5.112	Massachusetts Institute of Technology	Fall 2009
ORGANIC CHEMISTRY LAB	CHEM20 and CHEM27	Harvard University	2007-2009
SCIENCES, MATH, AND FRENCH	Peer Tutoring Program	Harvard University	2006-2009

## PROFESSIONAL SERVICES

ORGANIZING OFFICER (BOSTON LOCAL-LINK) Arrange speaker, venue, food for monthly event	American Physical Society September 2019-August 2020
SESSION CHAIR/DISCUSSION LEADER Single Molecule Approaches to Biology	Gordon Research Conference July 2018
PANELIST ON CAREER ADVICES Single Molecule Approaches to Biology	Gordon Research Seminar July 2018
CONFERENCE ORGANIZER The 10 <sup>10</sup> Materials and Processes Symposium (250 people)	ETH Zürich February-June 2015

## PEER REVIEWER

*Nano Lett.*, *ACS Appl. Mater. and Interfaces*, *Carbon*, *J. Microelectromech Syst.*, etc.

**OUTREACH-REMOTE RESEARCH AND CAREER MENTORSHIP**

A new model of undergraduate research framework was developed and tested since May 2020 with participants listed below. Researchers receive on average 1h of individual attention per week and additional interactions within teams of 2-4 members. Each of 8 teams prepare and present for the whole group every month. Examples of academic talks.

Jagger Alexander	Master's Student	University of Miami	Since May 2020
Riti Bhandarkar	Undergraduate Sophomore	Princeton University	Since May 2020
Issaiah Burch	Master's Student	Northeastern University	Since October 2020
Young Yoon Choi	Undergraduate Senior	UCSD	Since May 2020
Ellie Flint	Undergraduate Junior	UCSD	Since May 2020
Ryan Habeck	Undergraduate Junior	Vanderbilt	Since May 2020
Xiaohui Han	Postdoc	Independent Scientist	Since May 2020
Rabeya Hussaini	High School Teacher	Brandeis graduate	May-August 2020
Brittany Jones	B.S.	Western Washington University	Since May 2020
Skye Lam	High School Junior	Bronx High School of Science	Since May 2020
Drew Lira	Undergraduate Senior	UCSD	Since May 2020
Gregory Pan	Undergraduate Junior	Cornell	Since May 2020
Sophia Morgan	Undergraduate Senior	UCSD	Since July 2020
Romy M. Pein	Undergraduate Senior	Vanderbilt	Since May 2020
Alfredo Quezada	Undergraduate Senior	UCSD	Since May 2020
Wrishija Roy	Undergraduate Senior	Emory	Since May 2020
Sebastian Sanchez	Undergraduate Junior	Cornell	Since May 2020
Andrew Scacchi	Undergraduate Junior	Cornell	Since May 2020
Priyansh Sharma	Master's Student	Georgia Tech	Since May 2020
Isabel G. Wellington	Undergraduate Senior	UCSD	Since May 2020
Sophia Yue	Undergraduate Junior	Vanderbilt	Since May 2020
Asia Zhang	Undergraduate Junior	Stanford	Since May 2020
Zoe Lilja Zwecker	Undergraduate Senior	Colorado College	Since May 2020

**OUTREACH-COMMUNITY COLLEGE**

MASSASOIT COMMUNITY COLLEGE

Student internship opportunities and faculty training program

In Collaboration with Prof. Jacques-Antoine Jean

(In development without implementation since 2019)

## FELLOWSHIPS AND SCIENTIFIC AWARDS

ROWLAND FELLOWSHIP	Rowland Institute at Harvard	(2016-21)
GEORGE H. BÜCHI SUMMER GRADUATE FELLOWSHIP	Massachusetts Institute of Technology	(2010)
THOMAS T. HOOPES PRIZE (Outstanding Thesis)	Harvard University	(2010)
PRESIDENTIAL FELLOWSHIP	Massachusetts Institute of Technology	(2009-10)
CHRISTIENSEN PRIZE (Outstanding Research Achievement)	Harvard University	(2009)
HARVARD COLLEGE RESEARCH PROGRAM FELLOWSHIP	Harvard University	(2006-08)
HERCHEL SMITH UNDERGRADUATE RESEARCH FELLOWSHIP	Harvard University	(2006)
GOLD MEDAL (36 <sup>th</sup> International Chemistry Olympiad)	University of Kiel	(2004)
CHAMPION (Canadian Chemistry and Physics Olympiad)	University of Toronto	(2004)
FIRST PRIZE WINNER (Annual Chemistry Competition)	L'order des chimists du Quebec	(2004)
FIRST PLACE (National High School Chemistry Exam)	Chemical Institute of Canada	(2004)
CATHERING HAGGART WESTBURY MEMORIAL BURSARY	Marianopolis College	(2004)

## OTHER SELECTED AWARDS

PROVINCIAL FINALIST (Piano Solo Performance)	Canadian Music Competition	(2005)
YALE BOOK AWARD FOR INTELLECTUAL PROMISE	Association of Yale Alumni	(2005)
GOLDEN NOTE PRIZE (Piano Solo and Concerto Categories)	McGill Conservatory of Music	(2002)
GOLD MEDAL WINNER (Intra-conservatory competition)	Ecole de Musique Vincent-D'Indy	(2002)