Juan Paulo Hinestroza, Ph.D.

Rebecca Q. Morgan' 60 Professor in Fiber Science & Apparel Design

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Juan P. Hinestroza, a U.S. Fulbright Scholar and a PMP®, is the Rebecca Q. Morgan '60 Professor in Fiber Science & Apparel Design, and directs The Textiles Nanotechnology Laboratory in the College of Human Ecology at Cornell University in Ithaca, NY. Professor has experience in diverse research ecosystems including academia, the military, non-profit organizations, start-up companies as well as large corporations. Hinestroza has worked at institutions in Asia, the Middle East, Europe, as well as South and North America.

Hinestroza is inventor of more than 61 granted international patents; author of over 100 peer-reviewed articles and 7 book chapters; and editor of a book on cellulose-based green composites. Hinestroza's pioneering scientific work has enabled the creation of 3 start-up companies, and he has served as a consultant to major Fortune 500 corporations and investment banks in the field of smart and interactive textiles and fibers.

Professor Hinestroza obtained a Ph.D. from the Department of Chemical and Biomolecular Engineering at Tulane University and B.Sc. in Chemical Engineering from Universidad Industrial de Santander. Prior to pursuing doctoral studies, Professor Hinestroza worked as a process control engineer for The Dow Chemical Company. As a faculty member, Hinestroza has received over 8.8 MM USD in funding (Federal and State agencies as well as Industrial Consortiums) for his research in understanding and exploring new pathways for creating multifunctional fibers via manipulation of nanoscale phenomena.

Professor Hinestroza has been the recipient of a myriad of awards including the *National Science Foundation CAREER Award*, the *Young Investigator Award* from NYSTAR, the *Educator of the Year Award* from the Society of Professional Hispanic Engineers, The *Humanitarian Award* from the National Textile Center, *Academic Innovation Award* from Cornell Class of 72 and the 2024 *Teaching Innovation Award for creative use of generative AI tools*. Professor Hinestroza has lectured worldwide at universities and research centers in Argentina, Australia, Austria, Bhutan, Brazil, Canada, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Finland, France, Germany, Guatemala, Honduras, Hungary, India, Israel, Italy, Japan, Mexico, Morocco, New Zealand, Peru, Philippines, Portugal, Puerto Rico, Qatar, Romania, Russia, Saudi Arabia, Singapore, Slovenia, South Korea, Spain, Sri Lanka, Switzerland, Taiwan, Thailand, The Netherlands, Turkey, United Arab Emirates, United Kingdom and Vietnam.

Professor Hinestroza's scientific work has been featured in *Nature Nanotechnology, MRS Bulletin, Materials Today, C&E News, National Geographic, ASEE Prism* as well as mainstream media outlets such as *CNN, Wired, TechReview, The Guardian, Popular Science, ABC News, NY Times, Reuters, PBS, NPR and BBC.* In addition to his scientific endeavors, Professor Hinestroza and his research group are actively involved in community outreach activities aimed at increasing the number of members from underrepresented minority groups in science, technology, engineering and mathematics as well as engaging senior citizens in collaborative and inter-generational learning experiences.

EDUCATION

May 2002 **Ph.D. Chemical and Biomolecular Engineering**
Tulane University New Orleans, LA. Advisor: Daniel De Kee
Dissertation: Mass Transfer Through Elongated Membranes. Effect of Mechanical deformation on the barrier properties of polymeric materials.
Research funded by the US Department of Defense and Department of Energy

June 1995 **B.Sc. Chemical Engineering**
Universidad Industrial de Santander,
Honor Thesis: Optimization of the cooling fluids and process water systems of Dow Chemical's polystyrene production units at Cartagena, Colombia.
Thesis funded by The Dow Chemical Company

ACADEMIC EXPERIENCE

Jan 2006- Current **CORNELL UNIVERSITY**

- Awarded over 8.8 MM in external grants for research in smart textiles and textiles nanotechnology.
- Member of the Atkinson Center for Sustainable Future, the Cornell Center for Materials Research and the Cornell Entrepreneurship Institute.
- Actively involved in interdisciplinary research across campus (CBE, MAE, BME, PHYS, CHEM, ARTS)
- Actively involved in community outreach initiatives for K-12, High School Teachers, Community Colleges, underrepresented minority groups and senior citizens.

Faculty Senator (2015-2021)
- Two-term faculty senator

Director of Undergraduate Studies (2015-2017)
- Responsible for managing recruitment and retention of over 100 undergraduate students in two majors (Fiber Science and Fashion Design Management)
- Worked along the office of admissions and office of development to increase the profile of the Fiber Science & Apparel Design program among parents and potential students.
- Planned and managed the scheduling of undergraduate and graduate courses.

Director of Graduate Studies (2013-2015)
- Designed and implemented a five-year plan to plan and monitor funding of graduate students.
- Managed the Masters and Doctoral programs (40 students) and worked along the Cornell Graduate School to guarantee compliance with federal and state guidelines.

Aug 2003- Dec 2005 **NORTH CAROLINA STATE UNIVERSITY**
Assistant Professor

- Awarded 2.1 MM in external financial support for research in smart textiles and nanotechnology.
- Taught Polymer Engineering (TE/BME 463) and Fiber Science Courses and Labs (TE201/TE201L).
- Developed web-based interactive learning platforms for TE 463 and TE201 courses using Palm Pilots®.
- Research advisor for graduate students (5 MS and 1 Ph.D. student)
- Faculty Advisor for NC State Chapter of the Society of Hispanic Professional Engineers

May 2002- Aug 2003 **TULANE INSTITUTE FOR MACROMOLECULAR ENGINEERING AND SCIENCE**
Postdoctoral Fellow

- Performed research work and applied knowledge of polymer rheology (shear, capillary and optical rheometry) and thermo-mechanical analysis in the characterization of novel macromolecules and nanostructures.
- Planned and supervised first-year graduate students.
- Purchased, installed, and operated customized research-grade polymer processing equipment.

Jan 1998- May 2002 **TULANE UNIVERSITY**
Research Assistant

- **Recipient of the Omega Chi Epsilon Award for Excellence in Academic and Leadership skills in Chemical Engineering**
- Designed, built, and tested an apparatus to perform permeation experiments of organic chemicals through elongated polymeric materials.
- Developed a data acquisition algorithm to resolve FTIR spectra in real time.
- Developed a mathematical model for the permeation of organic compounds through polymeric materials.
- Assisted in the preparation of grant proposals for NSF, DOD, and DOE

Jan 1998- Jan 2001 **TULANE UNIVERSITY**
Teaching Assistant

- **3-times recipient of the Omega Chi Epsilon Outstanding Teaching Assistant**
- Assisted with teaching activities for three undergraduate courses
- Lectured on the use of process simulation software (ASPEN and HYSIS)
- Managed course information using web-based learning platforms.
- Coached undergraduate students for the AIChE Design Competition

INDUSTRIAL EXPERIENCE

Jun 1994- Dec 1997 **THE DOW CHEMICAL COMPANY**
Project Manager and Process Control Engineer

- Managed capital projects for US$1,250,000/year at a Polystyrene Production Unit.
- Programmed process control computers for two polystyrene production units (100,000 tons/year).
- Represented Latin America as a member of a global team for improvement in areas of polymerization, competitive analysis, and advanced process control strategies for the Polystyrene business.

Jan 2016- Current **JPH Scientific Consulting, LLC Owner**

- Provided consulting services on advanced textile manufacturing to Fortune 500 companies and top educational and research institutions.
- Interacted with over 60 textile manufacturing facilities in 4 continents. Visited fiber and yarn manufacturers, as well as equipment manufacturers specialized in knitting, weaving, braiding, nonwovens, dyeing, finishing, printing and assembly of textiles and electronic components.

HONORS AND AWARDS

Feb 2024	Teaching Innovation Award for Creative uses of AI tools- Cornell University
Dec 2023	Fellow, State University of New York SUNY Hispanic Leadership Institute
Oct 2023	Pirkey Centennial Lecturer at University of Texas, Austin
Nov 2022	Visiting Professor Shinshu University, Ueda, Japan
Oct 2022	Visiting Professor Chulalongkorn University, Bangkok, Thailand
Aug 2022	Visiting Professor KAUST, Jeddah, Kingdom of Saudi Arabia
Jan 2022	Visiting Professor U.S. ARMY DEVCOM Soldier Center, Natick, MA
Jan 2018	Visiting Professor Singapore University of Technology and Design, Singapore
Feb 2017	Academic Innovation Award- Cornell Class of 1972
Jun 2014	U.S. Fulbright Scholar
Jan 2014	Visiting Professor Brazilian Council for Science & Technology, Florianapolis, Brazil
Dec 2013	Visiting Fellow Chubu Foundation for Science and Technology, Shinshu University Ueda, Nagano, Japan
Jan 2012	Visiting Fellow Swiss National Science Foundation, ETH- EMPA, St. Gallen, Switzerland
Nov 2008	Educator of the Year Award. Society of Professional Hispanic Engineers
Apr 2007	National Science Foundation Early CAREER Development Award
Oct 2006	National Textile Center Humanitarian Award
July 2005	NYSTAR Young Investigator Award
Feb 2001	Omega Chi Epsilon Award- Honor Society of Chemical Engineering
Nov 2001	Tulane University Outstanding Teaching Assistant of the Year.
Nov 1999	Tulane University Outstanding Teaching Assistant of the Year.
Nov 1998	Tulane University Outstanding Teaching Assistant of the Year.
Jan 1998	Graduate Studies Scholarship. Tulane University.
Jan 1994	Undergraduate Thesis Scholarship- The Dow Chemical Company

ACCREDITATION AND MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- Certified Project Management Professional PMP ® (Since 2018) PMI# 5102613
- Member of the American Chemical Society (Since 1999)
  - Member of the Executive Committee of the ACS Division of Cellulose and Renewable Materials 2006-2011
  - Symposium Organizer for ACS National Meeting- Cellulose Division 2006-2010
- Member of the Society of Rheology (Since 1998)
- Member of the American Institute of Chemical Engineers (Since 1998)
- Life Member of the Society of Hispanic Professional Engineers (Since 2000)
- E.I.T. Registered with the Board of Professional Engineers of the State of California (1997)
- Alpha Gamma Sigma Honor Society (1997)
- Omega Chi Epsilon Honor Society (1998)

Teaching Experience

At Cornell

Spring 2024	FSAD3350	Fiber Science
Fall 2023	FSAD4660	Textiles Apparel and Innovation
Spring 2023	FSAD4444	Textile Futures and Innovation
Spring 2023	FSAD6160	Rheology of Solids
Fall 2021	FSAD4660	Textiles Apparel and Innovation
Spring 2021	FSAD6160	Rheology of Solids
Fall 2020	FSAD4660	Textiles Apparel and Innovation
Spring 2020	FSAD6160	Rheology of Solids
Fall 2019	FSAD4660	Textiles Apparel and Innovation
Fall 2016	FSAD3000	Introduction to Fiber Science Research
Fall 2016	FSAD4660	Textiles Apparel and Innovation
Fall 2016	FSAD6160	Rheology of Solids
Fall 2015	FSAD4660	Textiles Apparel and Innovation
Fall 2014	FSAD4660	Textiles Apparel and Innovation
Fall 2014	FSAD6160	Rheology of Solids
Fall 2013	FSAD4660	Textiles Apparel and Innovation
Fall 2013	FSAD6160	Rheology of Solids
Fall 2011	FSAD4660	Textiles Apparel and Innovation
Fall 2011	FSAD 6160	Rheology of Solids
Fall 2010	FSAD 4660	Textiles Apparel and Innovation
Fall 2010	FSAD 6390	Mechanics of Fibrous Systems
Fall 2009	FSAD 6160	Rheology of Solids
Fall 2009	FSAD 4660	Textiles Apparel and Innovation
Fall 2008	FSAD 4660	Textiles Apparel and Innovation
Fall 2007	FSAD 639	Mechanics of Fibrous Systems
Spring 2007	FSAD 616	Rheology of Solids
Fall 2007	FSAD 466	Textiles Apparel and Innovation
Fall 2006	TXA466	Innovation and Technology in Textiles

At NCSU

Spring 2005	TE/BME 463	Polymer Engineering and Science
Fall 2004	TE201/201L	Fiber Science and Engineering
Fall 2003	TE/BME 463	Polymer Engineering

Scientific Publications

Refereed Journal Publications Google Scholar ORCID

113 Phamonpon,W., **Hinestroza, JP.**, Puthongkham, P., Rodthongkum, N., Surface-engineered natural fibers: Emerging alternative substrates for chemical sensor applications: A review, *International Journal of Biological Macromolecules*,269, 2, (2024) https://doi.org/10.1016/j.ijbiomac.2024.132185.

112 Srikrishnarka, P., Haapasalo, J., **Hinestroza, JP**, Sun,Z., Nonappa. Wearable sensors for real-time condition and activity monitoring, *Small Science* (2024) https://doi.org/10.1002/smsc.202300358

111 Martin-Alfonso, MA., Rubio-Valle, JF, **Hinestroza,JP.,** Martin-Alfonso, JE,, Franco, JM Environmentally friendly tailor-made oleo-dispersions of electrospun cellulose acetate propionate nanostructures in castor oil for lubricant applications, *Nano Materials Science*, (2024) https://doi.org/10.1016/j.nanoms.2024.02.003

110 Martin-Alfonso, MA., Martin-Alfonso, JE, Rubio-Valle, JF, **Hinestroza,JP.,** Franco, JM Tunable architectures of electrospun cellulose acetate phthalate applied as thickeners in green semisolid lubricants, *Applied Materials Today*, (2024), 36,102030 https://doi.org/10.1016/j.apmt.2023.102030

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108 Wu, Qiuyue, Lis, Manuel Jose, Hinestroza, JP., Fire Performance of Cotton Fabrics Coated with 10-(2,5-Dihydroxyphenyl)-9,10-dihydro-9-xa-10-phosphaphenanthrene-10-oxide (DOPO-HQ) Zr-Based Metal-Organic Frameworks, *Polymers (2023)*,15(22) 4379 https://doi.org/10.3390/polym15224379

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79 Sanchez-Botero, L, Dimov, AV, Li, R., Smilgies, DM, **Hinestroza, JP**, In Situ and Real-Time Studies, via Synchrotron X-ray Scattering, of the Orientational Order of Cellulose Nanocrystals during Solution Shearing , *Langmuir* (2018) 34 (18), 5263-5272

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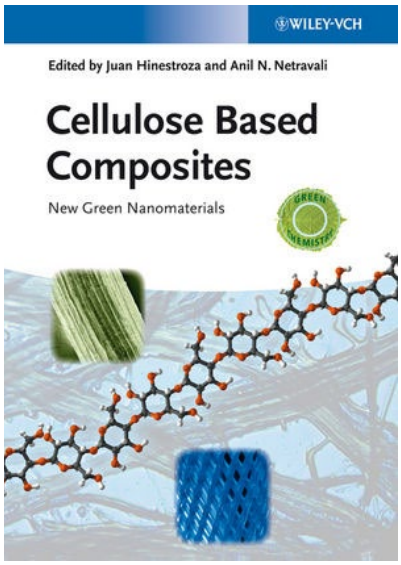

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24. 2021 **LU EP3286261**. Matériaux polymères poreux à base de cyclodextrine et leurs procédés de fabrication. Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

25. 2022 **MX 393381** Materiales Polimericos De Ciclodextrina Porosa Y Metodos De Fabricacion Y Uso De Los Mismos, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian

26. 2022 **BR112017022524-7** Material polimérico mesoporoso, composição, métodos para purificar uma amostra de fluido, para determinar a presença ou ausência de compostos em uma amostra de fluido, para remover compostos de uma amostra de fluido, para preparar um material polimérico poroso e uma composição, e, artigo de fabricação, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian

27. 2023 **EP 3784951 Unitary Patent (AT, BE, BG, DE, DK, EE, FI, FR, IT, LT, LU, LV, MT, NL, PT, SE, SI)** Poröse cyclodextrinpolymermaterialien sowie verfahren zur herstellung davon, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

28. 2023 **IN 435485** Porous cyclodextrin polymeric materials and methods of making and using the same, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

29. 2023 **GB/EP 3789451** Porous cyclodextrin polymeric materials, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

30. 2023 **CH/LI EP03789451** Porous cyclodextrin polymeric materials, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

31. 2023 **IE/EP 3789451** Porous cyclodextrin polymeric materials, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

32. 2023 **MC/EP 3789451** Porous cyclodextrin polymeric materials, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

33. 2023 **HU/E062732** Porous cyclodextrin polymeric materials, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

34. 2023 **NO/EP 3789451** Porous cyclodextrin polymeric materials, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

35. 2023 **PL/EP 3789451** Porowate materiały polimerowe na bazie cyklodekstryny i sposoby ich wytwarzania, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

36. 2023 **ES 2949850 T3** Materiales poliméricos de ciclodextrina porosa , Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

37. 2023 **IS/EP 3789451** GROPIN SÝKLÓDEXTRÍN FJÖLLIÐUEFNI, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

38. 2023 **CZ/EP 3789451** Porous cyclodextrin polymeric materials and methods of making and using the same, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

39. 2023 **AT/EP 3789451** PORÖSE CYCLODEXTRINPOLYMERMATERIALIEN, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

40. 2023 **TR2023-GE-473714** GÖZENEKLİ SİKLODEKSTRİN POLİMERİK MATERYALLER, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

41. 2023 **GR3113153** ΠΟΡΩΔΗ ΠΟΛΥΜΕΡΙΚΑ ΥΛΙΚΑ ΚΥΚΛΟΔΕΞΤΡΙΝΗΣ, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

42. 2023 **HK40045345 B.** 多孔環糊精聚合物材料及其製備方法 .Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan,** Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian

43. 2024 **CN112552535B.** 多孔環糊精聚合物材料及其製備方法 .Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan,** Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian

44. 2024 **CA 2983147** Porous cyclodextrin polymeric materials and methods of making and using the same, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., **Hinestroza, Juan**, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian.

RESEARCH FINANCIAL SUPPORT RECORD

FUNDED GRANTS

PIs: J. Hinestroza
Source of Funds: JumpStart NY
Amount Funded: $ 15,000
Starting Date: October 2023
Ending Date: February 2024

EXPLORING CHEMICAL MAPPING ON FIBROUS MATERIALS
PIs: J. Hinestroza
Source of Funds: Chicco USA
Amount Funded: $ 100,000
Starting Date: December 2021
Ending Date: December 2022

ENTREPRENEURSHIP AT THE INTERSECTION OF TECHNOLOGY AND DESIGN
PIs: M. Frey, J. Hinestroza, S. Yoon
Source of Funds: VentureWell
Amount Funded: $ 30,000
Starting Date: February 2021
Ending Date: January 2024

ARC FLASH PROTECTIVE FABRICS
PIs: J. Hinestroza
Source of Funds: Otex, Inc
Amount Funded: $ 15,000
Starting Date: October 2020
Ending Date: October 2021

RESPONSIVE METAL ORGANIC FRAMEWORKS
PIs: J. Hinestroza
Source of Funds: Toray Industries
Amount Funded: $ 100,000
Starting Date: January 2019
Ending Date: December 2021

FLUORINE-FREE COATINGS FOR TEXTILES. EXPLORING HYDROPHOBICITY AND OLEOPHOBICITY USING NANOPARTICLES
PIs: J. Hinestroza
Source of Funds: TAL industries
Amount Funded: $ 420,033
Starting Date: July 2015
Ending Date: June 2017

EXPLORING HYDROPHOBICITY AND OLEOPHOBICITY USING NANOPARTICLES
PIs: J. Hinestroza, R. Ozer
Source of Funds: Cornell Center for Fiber and Fashion Innovation – TAL industries
Amount Funded: $ 45,033
Starting Date: December 2014
Ending Date: June 2015

EXPLORING THE USE OF METAL-ORGANIC FRAMEWORKS TO ADD FUNCTIONALITY TO TEXTILE FIBERS
PIs: J. Hinestroza
Source of Funds: Cornell Center for Fiber and Fashion Innovation- Golden Quimica
Amount Funded: $ 60,000
Starting Date: September 2014
Ending Date: August 2017

Exploring bicomponent fibers for high performance filtration of body fluids
PIs: J. Hinestroza
Source of Funds: Fresenius Medical Care, Inc
Amount Funded: $ 35,000
Starting Date: November 2014
Ending Date: June 2015

REDUCING POLLUTION IN TEXTILE DYEING PROCESSES USING NANOIONIC MATERIALS
PIs: J. Hinestroza
Source of Funds: Lehman Fund for Scholarly Exchange with China
Amount Funded: $ 17,000
Starting Date: June 2013
Ending Date: June 2014

GAS IN- LIGHT OUT
PIs: J. Hinestroza, SY Yoon
Source of Funds: Cornell Center for Arts
Amount Funded: $ 5,000
Starting Date: May 2013
Ending Date: October 2014

EXPLORINGTHE USE OF BICOMPONENT FIBERS FOR HIGH PERFORMANCE FILTRATION SYSTEMS
PIs: S.K. Obendorf (PI), J. Hinestroza, C. Coffman
Source of Funds: USDA- National Institutes of Food- Hatch
Amount Funded: $ 150,000
Starting Date: October 2012
Ending Date: September 2016

DEVELOPMENT OF BIOCHAR-BASED FIBERS FOR PERSONAL PROTECTIVE EQUIPMENT
PIs: A. Hay (PI), J. Hinestroza
Source of Funds: Atkinson Center for a Sustainable Future
Amount Funded: $ 100,000
Starting Date: June 2010
Ending Date: May 2011

HUMAN CENTERED PHYSICAL INTERACTION MODELING FOR PERSONAL PROTECTIVE EQUIPMENT
PIs: D. Feathers (PI), S. Ashdown, J. Hinestroza
Source of Funds: Cornell College of Human Ecology
Amount Funded: $ 50,000
Starting Date: March 2010
Ending Date: February 2011

ENABLING THE USE OF RENEWABLE, SUSTAINABLE, AND NATIVE CELLULOSIC MATERIALS FROM THE AMAZON RAINFOREST AND THE ARGENTINEAN WETLANDS INTO HIGH PERFORMANCE APPLICATIONS
PI: J. Hinestroza (PI)
Source of Funds: Cornell Mario Einaudi Center for International Studies
Amount Funded: $ 10,000
Starting Date: September 2009
Ending Date: August 2010

INTERACTIONS OF NATURAL DYES WITH TEXTILE SUBSTRATES
PI: J. Hinestroza (PI)
Source of Funds: Cornell Center for Materials Research- Golden Quimica
Amount Funded: $ 120,000
Starting Date: September 2008
Ending Date: September 2010

MODELING OF FLOW CONTAINING NANOPARTICLES THROUGH ELECTROSTATICALLY CHARGED MONOLITH FILTERS
PI: J. Hinestroza (PI)
Source of Funds: US Defense Threat Reduction Agency
Amount Funded: $ 359,998
Starting Date: December 2007
Ending Date: September 2010

MANIPULATION OF NANOSCALE PHENOMENA AS A CLEAN AVENUE FOR THE PRODUCTION OF SMART AND MULTIFUNCTIONAL TEXTILES: A COLLABORATIVE ENDEAVOR OF CORNELL UNIVERSITY AND HONG KONG POLYTECHNIC UNIVERSITY
PI: J. Hinestroza (PI)
Source of Funds: Lehman Fund for Scholarly Exchange with China
Amount Funded: $ 20,000
Starting Date: Jan 2008
Ending Date: December 2008

USING AGRICULTURAL WASTE PRODUCTS AS SUBSTRATES FOR BIOLOGICALLY INSPIRED SYNTHESIS OF CATALYTIC METAL NANOPARTICLES
PI: J. Hinestroza (PI)
Source of Funds: USDA HATCH
Amount Funded: $75,000
Starting Date: September 2007
Ending Date: August 2010

METAL-ORGANIC POLYHEDRA BLENDED FIBERS FOR ADVANCED FILTRATION AND PERSONAL PROTECTION
PI: J. Hinestroza (PI)
Source of Funds: US Defense Threat Reduction Agency
Amount Funded: $756,114
Starting Date: May 2008
Ending Date: December 2011

POLYMER FLOW IN CONFINED ELASTIC BOUNDARIES: STRONGER CONTINUOUS NANOFIBERS
PI: J. Hinestroza (PI)
Source of Funds: US Department of Commerce- National Textile Center
Amount Funded: $80,689
Starting Date: June 2008
Ending Date: June 2011

LIGNOCELLULOSICS AS PRECURSORS OF HIGH PERFORMANCE BIOPOLYMER STRUCTURES
PIs: O. Rojas (PI), J. Kadhla, J. Hinestroza
Source of Funds: US Department of Agriculture- National Research Initiative
Amount Funded: $435,000
Starting Date: July 2007
Ending Date: June 2012

ENGINEERING PHYSIOLOGICAL DISTRIBUTIONS OF ZONE-SPECIFIC PHENOTYPE AND FIBER ORIENTATION IN 3-D TISSUE-ENGINEERED CARTILAGE SCAFFOLDS
PIs: B. Kirby (PI), J. Hinestroza, M. Frey
Source of Funds: Morgan Family Tissue Engineering Fund
Amount Funded: $ 115,000
Starting Date: September 2007
Ending Date: December 2008

CAREER: EXPLORING THE USE OF INDUCED NEGATIVE VISCOSITIES AS A NEW DEGREE OF FREEDOM IN POLYMER NANOMANUFACTURING
PI: J. Hinestroza (PI)
Source of Funds: National Science Foundation
Amount Funded: $412,000
Starting Date: July 2007
Ending Date: June 2011

FUNCTIONALIZED NANOFIBERS FOR HIGH PERFORMANCE FILTRATION OF CONTAMINANTS, BIOLOGICAL AGENTS AND HAZARDOUS MATERIALS
PI: J. Hinestroza (PI)
Source of Funds: NY State Office of Science,Technology and Academic Research
Amount Funded: $200,000
Starting Date: February 2006
Ending Date: January 2008

NER/COLLABORATIVE RESEARCH: MANIPULATION OF THE ELECTROSPINNING OF POLYMER FIBERS USING APPLIED MAGNETIC FIELDS
PI: J. Hinestroza (PI)
Source of Funds: National Science Foundation
Amount Funded: $55,999
Starting Date: February 2006
Ending Date: February 2007

NANOLAYER SELF-ASSEMBLIES: NOVEL, ADAPTABLE FIBER SURFACES
PIs: J. Hinestroza (PI), P. Hauser
Source of Funds: National Textile Center
Amount Funded: $163,500
Starting Date: May 2006
Ending Date: May 2007

BOUNDARY LAYER AND SELF-ASSEMBLY IN FIBER PROCESSING
PIs: O. Rojas (PI), J. Hinestroza, W. Krause
Source of Funds: National Textile Center
Amount Funded: $95,756
Starting Date: May 2006
Ending Date: May 2007

SMART TEXTILES VIA SELF-ASSEMBLED NANOLAYERS AND ATOMIC LAYER DEPOSITION
PIs: J. Hinestroza (PI), G. Parsons
Source of Funds: NCSU Nanotechnology Steering Committee
Amount Funded: $50,000
Starting Date: July 2005
Ending Date: June 2006

BIODEGRADABLE NANORODS FOR HIGH-PERFORMANCE MULTIFUNCTIONAL NANOCOMPOSITES
PIs: O. Rojas (PI), J. Hinestroza, J. Genzer Source of Funds: NCSU Nanotechnology Steering Committee Amount Funded: $50,000
Starting Date: July 2005
Ending Date: June 2006

DEBOTTLENECKING THE ELECTROSPINNING PROCESS
PIs: J. Hinestroza (PI), C. Rinaldi
Source of Funds: Institute of Textile Technology
Amount Funded: $45,000
Starting Date: March 2005
Ending Date: May 2006

BOUNDARY LAYER AND SELF-ASSEMBLY IN FIBER PROCESSING
PIs: O. Rojas (PI), J. Hinestroza, W. Krause
Source of Funds: National Textile Center
Amount Funded: $158,000
Starting Date: May 2005
Ending Date: May 2006

HIGH MODULUS ALIPHATIC NYLON FIBERS
PIs: R. Kotek (PI), A. Tonelli, J. Hinestroza
Source of Funds: National Textile Center
Amount Funded: $152,000
Starting Date: May 2005
Ending Date: May 2006

MECHANICAL PROPERTIES OF INDIVIDUAL NANOFIBERS
PIs: J. Hinestroza (PI)
Source of Funds: Nonwovens Cooperative Research Center
Amount Funded: $120,000
Starting Date: August 2004
Ending Date: August 2006

NANOTECHNOLOGY IN TEXTILES
PIs: J. Hinestroza (PI), W. Krause
Source of Funds: Department of Energy/ Oak Ridge National Laboratory
Amount Funded: User Grant- Access to CNMS Instrumentation
Starting Date: December 2003
Ending Date: October 2005

LIGHT WEIGHT CBRN PROTECTIVE FIRE FIGHTER TURNOUT
PIs: R. L. Barker (PI), D. Thompson, J. Hinestroza, B. Pourdeyhimi
Source of Funds: Department of Homeland Security/ Technical Support Working Group
Amount Funded: $836,217
Starting Date January, 2004
Ending Date June, 2005

INVESTIGATION OF FILTER DEGRADATION PROCESSES FOR RESPIRATORY PROTECTIVE SYSTEMS AND DEVELOPMENT OF MODELS FOR SYSTEM FUNCTION AND DETERIORATION
PIs: W. Jasper (PI), R. Grimes, J. Hinestroza, R. L. Barker, D. Thompson
Source of Funds: NIOSH, CDC
Amount Funded: $497,322
Starting Date May 2003
Ending Date June 2005

ELECTROSPUN MAGNETIC NANOFIBERS
PI: J. Hinestroza (PI)
Source of Funds: NCSU Faculty Research and Professional Development Fund
Amount Funded: $8,000
Starting Date March 2004
Ending Date March 2005

SELECTIVE MEMBRANES FOR THE SEPARATION OF BIOETHANOL FROM PLANT BIOMASS
PIs: J. Hinestroza (PI) and R. Sharma
Source of Funds: NCSU Faculty Research and Professional Development Fund
Amount Funded: $20,000
Starting Date May 2004
Ending Date May 2005

TEXTILE ENGINEERING EDUCATION AND RESEARCH IN CENTRAL AMERICA
PIs: J. Hinestroza (PI)
Source of Funds: NCSU Office of International Affairs
Amount Funded: $5,000
Starting Date May 2004
Ending Date July 2005

DEPOSITION OF FUNCTIONAL NANOLAYERS OVER TEXTILE FIBERS
PIs: J. Hinestroza (PI)
Source of Funds: Institute of Textile Technology
Amount Funded: $45,000
Starting Date May 2004
Ending Date May 2005

SYNTHESIS OF FUNCTIONALIZED POLYMERIC RESINS WITH A REACTIVE AMINO GROUPS
PIs: R. Kotek (PI), J. Hinestroza and H. Freeman
Source of Funds: American Red Cross and PRD Technologies, Inc
Amount Funded: $107,000
Starting Date May 2004
Ending Date July 2005

ADVISING AND MENTORING RECORD

Visiting Scholars

Luiz Gustavo Ribeiro	(2024)	Instituto Butantan, Brazil
Prof. Nadnudda Rodthongkum	(2023)	Chulalongkorn University, Thailand
Prof. Joselito Razal	(2019)	Deakin University, Australia
Prof. Midori Takasaki	(2019)	Kyoto Institute of Technology, Japan
Hirofumi Yamanaka	(2019-2020)	Toray Industries, Japan
Prof. Chester Zheng	(2018-2019)	Yancheng Institute of Technology, China
Prof. Esteban Garcia *	(2018)	Univ. Pontificia Bolivariana, Colombia
Prof. Tincuta Heinzel*	(2017)	University of Loughborough, UK
Prof. Adriana Herrera	(2015)	Universidad de Cartagena, Colombia
Prof. Ruya Ozer	(2015)	Radford University
Prof. Monica Alvarez	(2014)	EAFIT University, Colombia
Prof. Cesar Franco	(2013-2015)	Federal University of Santa Catarina, Brazil
Prof. Eugenio Otal	(2013, 2015)	National Technical University, Argentina
Prof. Manuela Kim	(2013, 2015)	National Technical University, Argentina
Prof. Young-Jin Jeong	(2011-12)	Soongsil University, Korea
Prof. Rodrigo Torres	(2010-11)	Universidad Industrial de Santander,
Prof. David Lukas*	(2010)	Technical University of Liberec, Czech
Prof. Cesar Sierra	(2010, 2014)	National University of Colombia, Colombia
Prof. Chaoxia Wang	(2009-10)	Jiangnan University, China
Prof. Adalena Kennedy	(2009-2011)	Federal University Amazon, Brazil
Prof. Jintu Fan	(2009)	Hong Kong Polytechnic University, Hong
Prof. Alba Avila	(2008)	Andes University, Colombia

* Fulbright Scholars

Postdoctoral Scholars

Goeun Sim, Ph.D.	Currently at HP
Frederick Ochanda, Ph.D.	Currently at United Technologies
Marcia Silva da Pinto, Ph,D.	Currently at Nestle Research Laboratories
Victoria Calero, Ph.D.	Currently at IBM Research
Huaning Zhu, Ph.D.	Currently at Dassault Systemes
Laura McJilton, Ph.D.	Currently at Intel
Sachin Talwar, Ph.D.	Currently at 3M
Junlong Song, Ph.D.	Currently Faculty at Nanjing National University
Hong Dong, Ph.D	Currently at the U.S. Army Research Laboratory
HaoHao Huang, Ph.D.	Currently Faculty at Southern China University of Technology

Ph.D. Students

Yelin Ko (Ph.D. 2021-2025)
Dissertation: *Depolymerization of waste polyester fabrics and repurposing of the depolymerization products onto functional textile finishes*

Marion Schelling, Ph.D. (2020)
Dissertation: *Decoration of cotton fabrics with metal-organic frameworks and their use towards functionalized micropollutant filters*
https://doi.org/10.7298/pjs0-9q32

Lina Sanchez-Botero (2018)
Dissertation: Complex Fluids: Synthesis, Assembly, and Flow Behavior
https://doi.org/10.7298/yb91-s914

Yan Li, Ph.D. (2009)
Dissertation: *Probing boundary lubrication phenomena on textile relevant surfaces*
https://hdl.handle.net/1813/13906

Jooyoun Kim, Ph.D. (2005)
Dissertation: *Investigation on Charge Deterioration of Electrically Charged Filter Media Using Electric Force Microscopy*.
http://www.lib.ncsu.edu/resolver/1840.16/4014

MSc Students

Cornell University

1. Abigail Reyes	(2025)	
2. Mikaila Roncevich	(2025)	
3. Jennifer Leung	(2023)	Currently Air Force Research Laboratories
4. Caroline Hong	(2021)	Currently at NC State University
5. CY Luo	(2021)	Currently at Evolved by Nature, LLC
6. Fangfang Wang	(2017)	Currently at NC State University
7. Simge Uzun	(2016)	Currently at Drexel University
8. Soshana Smith	(2012)	Currently at Cornell University
9. Camila Silva Flor	(2010)	Currently at L'Oreal Research
10. Karmann Mills	(2010)	Currently at Research Triangle Institute
11. Alejandra Andere-Jones	(2009)	Currently at 3M
12. Christina Diaz	(2009)	Currently at Sandia National Labs

NCSU

1. Timothy Price	(2006)	
2. Bilge Hatiboglu	(2006)	Currently at Intel, Inc
3. Melinda Satcher	(2006)	Currently at Kemira Chemicals, Inc
4. Kevin Hyde	(2005)	Currently at Alditri, LLC
5. Brian Shiels	(2005)	Currently at ArcWear

Undergraduate Researchers

Cornell University

1. Kyra Husen (BEE)
2. Eliot Lee (FSAD)
3. Eve Lesburg (MSE)
4. Ashlynn Dumaw (CHE)
5. Ashley Liaw (FSAD)
6. Kendall O'Shea (FSAD)
7. Grace Wu (FSAD)
8. Calista Martin (IND)
9. Melisa Astra Kreismanis (FSAD)

10. Grace Falanga (MSE)
11. Rema Topal (MSE)
12. Antonio Martinez (FSAD)
13. Mariam Ashroff Omar (FSAD)
14. Samantha Prashad (FSAD)
15. Cristian Aramburo (CHE)
16. Rae Dagdagan (FSAD)
17. Lauren Briggs (BME)
18. Natasha Armbrust (CS)
19. Javier Jimenez (FSAD) Currently at NC State University
20. Mario Velado (HBHS)
21. Alejandro Garcia (PHYS) Currently at Med School Cornell
22. Samuel Leyens (BEE)
23. Joseph Edwards (BEE) Currently at Procter& Gamble
24. Jessica Lin (BEE)
25. Zerui Sophie Zhu (CHEME) Currenty at Oracle,Inc
26. Victor Haas (CHEM)
27. Catherine Reyes(CHEM) Currently at University of Luxembourg
28. Zhe Hao Zhou (CHEME) Currently at Corning, Inc
29. Jason (YoonChul) Haam (FSAD)
30. Deanna Nardella (HBHS)
31. Alexander Hartoto (ECE)
32. Brian Choi (ECE) Currently at Intel, Inc
33. Ashley Weiner (FSAD)
34. Kelton Minor (DEA)
35. Emilija Mayer (MSE) Currently at GE, Inc
36. George Osae (CHEM)
37. Kathleen M. Donley (FSAD)
38. Carlos Becerril (UTSA-CCMR REU) Currently at Cymer, Inc
39. Rafael Aquino (MAE) Graduate School at Cornell University
40. Naomi Birbach (CHEM) Currently at US Patent and Trademark Office
41. Selina Lok (MAE)
42. Juan Uribe (CHEME) Currently at Procter and Gamble
43. Hekia Bodwitch (HBHS) Graduate School at UC Berkeley
44. Michael Crouch (NCSU-CCMR REU) Law School at UC Berkeley
45. Jimmy Zhou (ECE)
46. Elizabeth Franzen (HBS) Cornell Weill Medical School

NCSU

47. Troy Gould Currently at University of Colorado
48. William McGuire Currently at Solace Development Group
49. Mary Rebovich Graduate School Cornell University
50. Amika Olchovick
51. Errol Purkett Currently at Johnson and Johnson
52. Jordan Massey Graduate School U of Texas San Antonio

Reviewer of peer-reviewed publications:

Nature Nanotechnology
ACS Applied Materials and Interfaces Macromolecules
Nanotechnology
Cellulose
Journal of Engineered Fibers and Fabrics AICHE Journal

Journal of Biomaterials Science, Polymer Edition Journal of the Textile Institute
Journal of Polymer Science: PartB: Polymer Physics
Current Opinions in Colloidal Science
Chemistry of Materials
Colloids and Surfaces A: Physicochemical and Engineering Aspects
ACS Nano
Carbohydrate polymers
Langmuir
Biomimetics

Reviewer of research proposals:

National Science Foundation
The US National Academies
National Aeronautics and Space Administration NASA
Defense Advanced Research Project Agency DARPA
U.S. Department of Agriculture
U.S. Civilian Research and Development Foundation
U.S. Department of Defense
U.S. Army Research Office Czech Science Foundation
Ontario Ministry of Research and Innovation
Israel Science Foundation
National Research Foundation Singapore

COMMUNITY OUTREACH ACTIVITIES

Science Demonstrations

CCMR- Cornell Center for Material Research

- Big Brothers Big Sisters of America- (After School Programs for K-12 kids)
- Microworld Festival in New York City and Puerto Rico (Elementary School Teachers)
- Materials Science Workshop in New York City (High School students)

CNS- Cornell Center for Nanoscale Systems

- Summer Institute for Physics Teachers (High School Teachers)
- Nanoday at Cornell Festival (K-12 students)

CNF (Cornell Nanoscale Science and Technology Facility)

- Kavli Institute Journalists Workshop in Nanotechnology (Science Journalists)

FSAD (Fiber Science & Apparel Design)

- Campus-wide Career Explorations Workshop (High School Students)

Technical Consultant to Small Businesses in New York State

CCMR- Cornell Center for Material Research

- NYSTAR Jumpstart project with NewTex, Inc. Victor, NY
- NYSTAR Jumpstart project with Select Fabricators, Inc. Canandaigua, NY
- NYSTAR Jumpstart project with Buckingham Ropes, Inc. Binghamton, NY
- NYSTAR Jumpstart project with Chimera Bioworks, Inc, Syracuse, NY

Selected Public Media

PBS
https://www.pbs.org/video/nanotechnology-and-textiles-g5davc/
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Involvement with Underrepresented Minorities

- **Society of Hispanic Professional Engineers SHPE**
  - Educator of the Year Award
  - Judge Technical Paper Competition
  - Workshop for students interested in careers in academia.
- **Ronald E. McNair Post-Baccalaureate Achievement Program**
  - Mentoring of engineering and science students
- **National GEM Consortium for Graduate Degrees for Minorities in Engineering and Science**
  - Reviewer of fellowship applications and mentor
- **Louis Stokes Alliance for Minority Participation Undergraduate Research**
  - Develop a workshop on preparing research posters
- **Society of Women Engineers**
  - Mentoring of female engineering and science students
  - Recruitment of REU and graduate students
- **College of Human Ecology Mentoring Program**
  - Faculty Partner for students of color