Francesco Bullo

Department of Mechanical Engineering & Center for Control, Dynamical Systems and Computation
University of California at Santa Barbara
2325 Engineering II, Santa Barbara, CA 93106-5070
Tel +1 (805) 893-5169, Fax: +1 (805) 893-8651, Date: January 26, 2026
mailto:bullo@ucsb.edu https://fbullo.github.io

Current Academic Employment

Distinguished Professor (since 2022; Assoc Prof 2004 - 2008, Prof 2008-2022), Department of Mechanical Engineering
Chair (Jul 2013 - June 2017), Department of Mechanical Engineering
Affiliate, Dynamical Neuroscience Program
Affiliate, Center for Control, Dynamical Systems and Computation
Affiliate, Department of Computer Science
Affiliate, Department of Electrical and Computer Engineering
University of California at Santa Barbara *Summer 2004 – present*

Previous Academic Employment

Research Assistant Professor, Coordinated Science Laboratory
Assistant Professor, Department of General Engineering
Affiliate, Department of Electrical and Computer Engineering & Department of Aerospace Engineering
University of Illinois at Urbana-Champaign *Fall 1998 – Summer 2004*

Education

Ph.D., Control and Dynamical Systems, California Institute of Technology, Aug 1998
Laurea (joint B.S./M.S. equivalent), Electrical and Computer Engineering, University of Padova, Italy, Jun 1994

Research Interests

Multi-agent systems and complex networks with application to robotic and multi-vehicle coordination, distributed computing and optimization, power networks, sensor/actuator networks, social networks and camera networks. Earlier work on vehicle routing, geometric control, and motion planning.

Research Awards and Honors

Elected Fellow, Network Science Society (NetSci), Class of 2025
"For seminal contributions to the study of control and synchronization of network systems, including the role of network structure in multivehicle coordination and synchronization in power-grid networks."
Fellow, Asia-Pacific Artificial Intelligence Association (AAIA), 2023
Elected Fellow, American Society of Mechanical Engineers (ASME), Class of 2022
Sackler Lecturer, May 2022, Institute of Advanced Studies, Tel Aviv University
Elected Fellow, Society of Industrial and Applied Mathematics (SIAM), Class of 2019
"For contributions to geometric control, distributed control, and network systems with application to robotic coordination, power grids, and social networks."
Distinguished Scientist Award, PIFI program, Chinese Academy of Sciences, 2018
Elected Fellow, International Federation of Automatic Control (IFAC), Class of 2017
"For contributions to network systems and distributed control with application to robotic coordination and power grids."
Distinguished Lecturer, IEEE Control Systems Society, 2016-2018
Distinguished Member Award, IEEE Control Systems Society, 2015
Elected Fellow, Institute of Electral and Electronics Engineers (IEEE), Class of 2010
"For contributions to geometric and cooperative control with applications to mechanical and robotic systems"
Young Investigator Award, Office of Naval Research, 2003
Xerox Foundation Award for Faculty Research, UIUC College of Engineering, 2003
Earl C. Anthony Institute Fellowship, California Institute of Technology, Sep 1995 - Aug 1996
Laurea, Summa Cum Laude, University of Padova, Italy, 1994
Education Abroad Program Fellowship, University of California at San Diego, 1992-1993

Paper Recognitions
IEEE Control Systems Letters Outstanding Paper Award, 2024
O. Hugo Schuck Best Paper Award, American Automatic Control Council, 2023
Outstanding Paper Award, IEEE Transactions on Control of Network Systems, 2016
Guillemin-Cauer Best Paper Award, IEEE Transactions on Circuits & Systems, 2016
IFAC Automatica Best Paper Award, 2014
SIAG/CST Best Paper Prize, SIAM Journal on Control and Optimization, 2013
O. Hugo Schuck Best Paper Award, American Automatic Control Council, 2011
Article selection for inclusion in SIGEST section of SIAM Review, Mar 2009
Outstanding Paper Award, IEEE Control Systems Magazine, 2008
Best Student Paper Award Winner (as advisor): CDC 2002, ACC 2006, ACC 2010
Best Student Paper Award Finalist (as advisor): ICRA 2002, ACC 2005, CDC 2005, CDC 2007, ECC 2013, ACC 2022

Teaching and Mentoring Awards
Outstanding Graduate Mentor Award, UCSB Academic Senate, 2015
Instructional Improvement Award, UCSB Academics Program, 2010
Primo Professor, Kiosk UCSB Student Handbook, 2008-2010
Outstanding Faculty Member, Department of Mechanical Engineering, UCSB, 2008
Outstanding Advisor Award, UIUC College of Engineering, 2004
List of Teachers Ranked as Excellent by their Students, UIUC, Spring 2001
Gamma Epsilon Excellence in Teaching Award, General Engineering Department, UIUC, 2001

Selected Invited Lectures (P=Plenary, SP=SemiPlenary, K=Keynote, D=Distinguished, I=Invited Lecture)

(P): 13th IFAC Symposium on Nonlinear Control Systems (NOLCOS), Reykjavik, Iceland, Jul 2025
(K): 3rd International Conference on Computers and Automation, online, Dec 2023
(P): 19th Red Raider Symposium on Differential Geometry and Integrable Systems, Lubbock, TX, Apr 2023
(P): 61th IEEE Conference in Decision and Control, Cancun, Mexico, Dec 2022
(K): 10th Int. Symposium on Computational Intelligence and Industrial Applications (ISCIIA), online, Sep 2022
(K): 9th SIAM Workshop on Network Science (NS22), online, Sep 2022
(K): 7th Asia-Pacific Conference on Intelligent Robot Systems (ACIRS), online, Jul 2022
(K): 7th Int. Workshop on Social Sensing (SocialSens 2022), Atlanta, Georgia, Jun 2022
(K): 2nd Int. Symposium on Automation, Mechanical and Design Engineering, Beijing, China, Dec 2020
(P): 20th Int. Conference on Control, Automation and Systems, Busan, Korea, Oct 2020
(K): 3rd Int. Symposium on Swarm Behavior and Bio-Inspired Robotics, Okinawa, Japan, Nov 2019
(D): Colloquia Roberto Tempo on Automatica, CNR and Politecnico di Torino, Turin, Italy, Apr 2019
(P): Society of Instrument and Control Engineers Annual Conference, Nara Kasugano, Japan, Sep 2018
(P): 37th Chinese Control Conference, Wuhan, China, Jul 2018
(D): Kwan Chao-Chi Distinguished Lecture, Chinese Academy of Science, Jun 2018
(K): 30th Chinese Control and Decision Conference, Shenyang, China, Jun 2018
(P): 10th ASME Dynamic Systems and Control Conference, Tysons Corner, VA, USA, Oct 2017
(P): 14th SIAM Conference on Control & Its Applications, Pittsburgh, PA, USA, Jul 2017
(P): 3rd Indian Control Conference, IIT Guwahati, India, Jan 2017
(D): 28th Chinese Control and Decision Conference, Yinchuan, China, May 2016
(P): 54th IEEE Conference in Decision and Control, Osaka, Japan, Dec 2015
(K): 15th Anniversary Celebration, Department of Mechanical Engineering, UC Riverside, May 2015
(P): 16th Latin American Congress of Automatic Control, Cancún, México, Oct 2014
(I): CDS@20, CDS 20th Anniversary Workshop, Caltech, USA, Aug 2014
(P): 11th Int. Symp. on Distributed Autonomous Robotic Systems (DARS), Baltimore, MD, USA, Nov 2012
(SP): 20th Int. Symp. on Mathematical Theory of Networks and Systems (MTNS), Melbourne, Australia, Jul 2012
(P): 5th Georgia Tech Decision & Control Student Symposium, Atlanta, GA, USA, Apr 2012
(P): 11th SIAM Conference on Control & Its Applications, Baltimore, MD, USA, Jul 2011
(D): 2nd IFAC W. on Distributed Estimation & Control in Networked Systems (NECSYS), Annecy, France, Sep 2010
(D): Symposium on Recent Trends in Networked Systems and Cooperative Control, Stuttgart, Germany, Sep 2009
(P): 17th IEEE Int. Conference on Control Applications (CCA), Saint Petersburg, Russia, Jul 2009
(D): 5th Int. Conf. on Applied Mathematics and Computing, Plovdiv, Bulgaria, Aug 2008
(P): 9th Workshop on Hybrid Systems: Computation and Control (HSCC), Santa Barbara, CA, USA, Mar 2006
(P): 25th Benelux Meeting on Systems and Control, Heeze, The Netherlands, Mar 2006
(P): Workshop on Networked Embedded Sensing and Control, South Bend, IN, USA, Oct 2005
(SP): 16th Int. Symp. on Mathematical Theory of Networks and Systems (MTNS), Leuven, Belgium, Jul 2004
(P): 2nd IFAC Workshop Lagrangian & Hamiltonian Methods for Control, Seville, Spain, Apr 2003

URL Links

- Latest version of this CV: https://fbullo.github.io/fbullo-cv.pdf
- Orcid ID: http://orcid.org/0000-0002-4785-2118
- Google Scholar: https://scholar.google.com/citations?hl=en&user=stCtR0QAAAAJ
- ResearcherID: http://www.researcherid.com/rid/B-8146-2013
- Scopus: http://www.scopus.com/authid/detail.url?authorId=35557864500

Visiting and External Positions

- Visiting Scholar, Australian National University, Canberra, Australia, Aug 2007
- Visiting Professor, University of Cagliari, Italy, Jul 2010
- FIRST Scholar Visiting Professor, University of Colorado at Boulder, Jul 2012
- Member, Scientific Committee, Thematic semester on Network Dynamics and Resilence, Fall 2019, Dipartimento di Scienze Matematiche G. L. Lagrange, Politecnico di Torino, Italy
- Member, Technical Advisory Board of Network Systems Learning, Control and Evolution Group, IIT Madras, Jun 2021 - May 2023
- Member, Doctoral School Board, Ph.D. Program in Modeling, Engineering Risk and Complexity, Scuola Superiore Meridionale (SSM), Italy, Jul 2021-present

Lectures

(2025): University of Houston, Johns Hopkins University, Institute for Mathematical and Statistical Innovation (Chicago), IFAC Nolcos Symposium (Reykjavik, Iceland), Northwestern University, University of Illinois at Urbana-Champaign (Basar Fest 25), CDC Workshop on Neurocomputation and Dynamics, CDC tutorial session on Contraction Theory in Control, Optimization, and Learning

(2024): Rutgers University, California Institute of Technology, Massachusetts Institute of Technology, Northeastern University, UC San Diego (BobFest), Washington University in St. Louis, École Polytechnique Fédérale de Lausanne (Switzerland)

(2023): Red Raider Symposium (Lubbock, Texas), University of Padova (Intelligent Network Systems Workshop), Engineering and Science Seminar Peking University (China), ACC Workshop on Contraction Theory (San Diego), Zhejiang University (Distinguished lecture, SDG Global Summer School, China, Elliit Symposium on Network Dynamics and Control (Linköping, Sweden), Creative Convergence Workshop Princeton, 3rd International Conference on Computers and Automation (Paris, France), Workshop on Emerging Challenges of Network-Enabled Control and Optimization (Singapore)

(2022): Masry Memorial Symposium at UC San Diego, NYU, IIT Madras, Workshop Synchronization in Natural and Engineering Systems (online), University of Iowa, Caltech, Tel Aviv University (Israel), SocialSens22 (Atlanta, Georgia), Asia-Pacific Conference on Intelligent Robot Systems, S.I.D.R.A. PhD Summer School (Italian Control Systems Society, Bertinoro, Italy), SIAM Network Science Workshop (online), Control Days Workshop (Università di Padova, Italy), Symposium on Computational Intelligence and Industrial Applications (online), IEEE CSS Control Days and ITTK (online), Universita' di Napoli, IEEE CDC (Cancun, Mexico)

(2021): Michigan State University, Tel-Aviv University (Israel), Universita' di Napoli, Louisiana State University, NIT Patna (India), Robotics and Computer Science World Forum (online), Beijing Institute of Technology, Modeling, Estimation, and Control Conference (invited tutorial session), Universita' di Napoli (SSM)

(2020): Stanford, UCSB Center for Center for Information Technology and Society, ICASS (Busan, Korea), UC Merced, Beijing Institute of Technology, Universita' di Napoli, CDC COVID-19 Focus Sessions, CDC Workshop on Social Economic Networks, Symposium on Automation, Mechanical and Design Engineering (Beijing, China)

(2019): DTRA, USC, Universita di Bologna (Italy), Politecnico di Torino (Colloquia Roberto Tempo on Automatica, Italy), University of Washington Seattle, Army Research Laboratory, Georgia Tech, Politecnico di Torino (Workshop on Infrastructure Networks), Politecnico di Torino (Workshop on Social, Economic and Financial Networks)

(2018): Chinese Control and Decision Conference (keynote, Shenyang), Northeastern University (China), Shenyang Institute of Automation (China), Kwan Chao-Chih Distinguished Lecture (AMSS, Beijing, China), Peking University, Beijing Institute of Technology, CAS Worskhop on Distributed Control and Multi-Agent Systems (Beijing, China), HauserFest (Workshop at ACC Milwaukee), Chinese Control Conference (plenary, Wuhan), Huazhong University of Science and Technology, Zheijiang University, SICE Conference (plenary, Nara, Japan), University of South Florida (Forum on Robotics & Control Engineering), UC Irvine

(2017): IIT Bombay, IIT Guwahati (plenary talk, Indian Control Conference), SIAM CT&A Conference (Pittsburgh, plenary talk), University of Texas at Dallas, ASME DSCC Conference, University of Southern California, UC San Diego, University of Toronto (Distinguished Lecture)

(2016): 1st SoCal Robotics Symposium (UCSD), Chinese Academy of Science (Distinguished Lecture, National Center for Mathematics and Interdisciplinary Sciences, Beijing, China), Chinese Control and Decision Conference (Yinchuan, China), UT Austin (Conference on Opinion Dynamics), MIT, Harvard, BasarFest at IEEE CDC (Las Vegas, USA)

(2015): Pacific Northwest National Lab, UC Riverside (keynote speaker, 15th Anniversary Celebration, ME Department), MorseFest at IEEE CDC (Osaka, Japan), IEEE CDC (Osaka, Japan)

(2014): University of New Mexico (Distinguished Lecture Series in Cyberphysical Systems), CDS 20th Anniversary Workshop (Caltech), Latin American Congress of Automatic Control (Cancún, México), SoCal Symp on Network Economics and Game Theory (Caltech)

(2013): Duke University, Northwestern University (Featured Speaker, Complex Systems Seminar Series), SIAM CT&A Conference (San Diego, CA), Allerton Conference, NSF Workshop on Future Power Systems (Washington DC), CDC Workshop on Synchronization and Control (Florence, Italy)

(2012): Lund Institute of Technology (Sweden), KTH Royal Institute of Technology (Sweden), UC San Diego, ICB Conference, Yale University, UTRC, Georgia Tech, Tsinghua University (Int Workshop on Emerging Frontiers in System and Control, Beijing, China), 32nd Annual CNLS Conference (Los Alamos National Lab), RMIT University (Melbourne), University of Melbourne (Australia), University of Colorado at Boulder, UC Riverside, NSF CPS PI Meeting, University of Texas Dallas, Johns Hopkins University, DARS Conference, Tutorial session at IEEE CDC in Maui

(2011): Baltimore (SIAM CT 11), Systems Security Workshop at IEEE CDC in Orlando

(2010): UC San Diego (ITA Workshop), University of New Mexico, Los Alamos National Laboratory, Massachusetts Institute of Technology, ARL Adelphi Laboratory Center, California Institute of Technology, University of Southern California, University of Illinois at Urbana-Champaign, Northwestern University, University of Illinois at Chicago, University of Cagliari (Italy), CNRS Supélec (France), UC Irvine

(2009): UC San Diego (ITA Workshop), University of Liege (Belgium), ICB Conference, University of Washington, Carnegie Mellon University, Block Island Workshop on Swarming, University of Lecce (Italy), University of Stuttgart (Germany, NE{S|T}COC Symposium), ETH Zürich (Switzerland)

(2008): UC San Diego (ITA Workshop), University of Siena (Italy), University of Pisa (Italy), UC Los Angeles, Yale University, City College of New York, University of Pennsylvania, Massachusetts Institute of Technology, Yale University (Frontiers in Distributed Communication, Sensing and Control Workshop), Johns Hopkins University

(2007): University of Illinois, Georgia Tech (RSS Workshop on Robotic Sensor Networks), Australian National University (Canberra, ACT)

(2006): UC Santa Cruz, UC Los Angeles (IPAM), Benelux Meeting on Systems and Control (Netherlands), HSCC (Santa Barbara), UC Los Angeles (Center for Systems, Dynamics and Control), Caltech, Boston University (NSF Workshop on Future Directions in Networked Sensing), Tokyo Institute of Technology (Japan)

(2005): Universitad Autònoma de Barcelona (Spain), California Institute of Technology (Workshop on Control, Estimation, and Communication), UC Berkeley, University of Notre Dame (Workshop on Networked Embedded Sensing and Control), EPFL (Workshop on Networked Embedded Systems and Distributed Sensing)

(2004): CNR Roma (Italy), Yale University, Boston University, Carnegie Mellon University, K. U. Leuven (Belgium), Ohio State University, Northwestern University

(2003): University of Pisa (Italy), Kyoto University (Japan), UC Santa Barbara, Block Island Workshop on Swarming, Wright-Patterson AFB, Stanford University, Honeywell, Virginia Tech, Caltech

(2002): Old Dominion University, University of Maryland at College-Park, University of Illinois at Chicago, Queen's University in Kingston (Canada), University of Twente (Netherlands)

(2001): California Institute of Technology, University of Pennsylvania, Massachusetts Institute of Technology, UC Santa Barbara, University of Padova (Italy)

(2000): Queen's University in Kingston (Canada), Arizona State University, Washington University in St. Louis, SISSA (Triest, Italy)

(1999): Mathematisches Forschungsinsitut Oberwolfach (Germany), University of Michigan, UC Berkeley, Washington University in St. Louis, Princeton University

(1998): UC Berkeley, University of Illinois at Urbana-Champaign, UC San Diego

Advising

Current Graduate Students

(i) Gilberto Díaz-García (Ph.D. student, ECE)
- Mentoring: Co-Chair of Doctoral Committee with Prof. Jason Marden, Sep 21 - present

(ii) Anand Gokhale (Ph.D. student, ME UCSB)
- Mentoring: Chair of Doctoral Committee, Sep 22 - present
- Award: IEEE Control Systems Letters Outstanding Paper Award, 2024

(iii) Yohan John (Ph.D. student, ME UCSB)
- Mentoring: Chair of Doctoral Committee, Sep 22 - present

(iv) Abed K. Mussafar (Ph.D. student, ME UCSB)
- Mentoring: Chair of Doctoral Committee, Jan 23 - present

(v) Simone Bettetti (Ph.D. student, Universita' di Padova, Italy)
- Mentoring: CoChair of Doctoral Committee with Professors Sandro Zampieri and Giacomo Baggio, Jan 23 - present

(vi) Rubén Blasco-Aguado (Ph.D. student, Universita' di Padova, Italy)
- Mentoring: Co-Chair of Doctoral Committee with Prof. Giovanni Russo, May 24 - present
- Award: Doctoral fellowship, Modeling and Engineering Risk and Complexity, SSM

(vii) Arie Ogranovich (Ph.D. student, ME UCSB)
- Mentoring: Chair of Doctoral Committee, Sep 24 - present
- Award: UCSB Central Campus Fellowships

(viii) Arvind R. Venkatakrishnan (Ph.D. student, ME UCSB)
- Mentoring: Chair of Doctoral Committee, Sep 24 - present

(ix) Christopher Koh (Ph.D. student, ME UCSB)
- Mentoring: Chair of Doctoral Committee, Sep 25 - present

Former PhD Students and Placement after Graduation (as last available)

(i) Gregory J. Toussaint, Ph.D., Electrical and Computer Engineering, UIUC
- Mentoring: Co-Advisor with Prof. Tamer Başar, Aug 98 - Jun 00
- Initial Placement: Assistant Professor, Electrical and Computer Engineering Department, US Air Force Academy, Colorado

(ii) W. Todd Cerven, Ph.D., Aeronautical and Astronautical Engineering, UIUC
- Mentoring: Co-Advisor and Co-Chair of Doctoral Committee with Prof. Victoria Coverstone, Aug 98 - Jun 03
- Initial Placement: Member of Technical Staff, Aerospace Corporation, Chantille, Virginia
- Current Placement: Senior Member of Technical Staff, Aerospace Corporation, Chantille, Virginia
- Award: NSF Graduate Fellowship 1997-2001
- Award: AIAA Guidance, Navigation and Control Graduate Award 2001
- Award: Aerospace Illinois Space Consortium Fellowship 2003

(iii) Giuseppe Notarstefano, Ph.D., Electrical and Computer Engineering, University of Padova, Italy
- Mentoring: Co-Advisor with Prof. Ruggero Frezza, Jan 04 - Apr 07
- Current Placement: Professor, Universita' di Bologna
- Award: 2014 Starting Grant by the European Research Committee

(iv) Anurag Ganguli, Ph.D., Electrical and Computer Engineering, UIUC
- Mentoring: Advisor and Chair of Doctoral Committee, Aug 02 - Apr 07
- Initial Placement: Senior Research and Development Engineer, UtopiaCompression Corporation, Los Angeles, California
- Current Placement: PlusAI, California
- Award: Best Student Paper Award Finalist, 2005 American Control Conference
- Award: Best Student Paper Award Winner, 2006 American Control Conference
- Award: Carver Research Fellow, University of Illinois at Urbana Champaign

(v) Ketan Savla, Ph.D., Electrical and Computer Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Aug 03 - Aug 07
Initial Placement:	Postdoctoral Scientist, MIT
Current Placement:	Associate Professor & John and Dorothy Shea Early Career Chair in Civil Engineering, University of Southern California
Award:	Best Student Paper Award Finalist, 2005 IEEE Conf. on Decision and Control
Award:	2009 Best PhD Thesis Award, Center for Control, Dynamical Systems and Computation, UCSB
Award:	2017 Eckman Award, American Automatic Control Council

(vi) Sara Susca, Ph.D., Electrical and Computer Engineering UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 04 - Dec 07
Initial Placement:	Senior Research Engineer, Honeywell Research Labs, Minneapolis, Minnesota
Current Placement:	Project Manager, Jet Propulsion Laboratory, California

(vii) Nikolaj Nordkvist, Ph.D., Mathematics, Technical University of Denmark

Mentoring:	Co-Advisor with Prof. Paul Hjort, Sep 05 - Jan 08
Initial Placement:	Postdoctoral Scientist, University of Hawaii at Manoa, Hawaii
Current Placement:	Research Scientist, Numerica Corporation, Fort Collins, Colorado

(viii) Stephen L. Smith, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 05 - Sep 09
Initial Placement:	Postdoctoral Scientist, MIT
Current Placement:	Professor and Canada Research Chair, Electrical and Computer Engineering, University of Waterloo, Canada
Award:	NSERC Graduate Scholarship
Award:	Best Student Paper Award Finalist, 2007 IEEE Conf. on Decision and Control

(ix) Shaunak D. Bopardikar, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Co-Advisor and Co-Chair of Doctoral Committee with Prof. Joao Hespanha, Sep 05 - Mar 10
Initial Placement:	Postdoctoral Scientist, UCSB
Initial Placement:	Senior Research Scientist, United Technology Research Center, Berkeley, California
Current Placement:	Assistant Professor, Electrical and Computer Engineering, Michigan State University

(x) Karl J. Obermeyer, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 05 - Jun 10
Initial Placement:	Controls Engineer, Air Force Research Lab, Wright-Patterson AFB, Ohio
Initial Placement:	Research Scientist, Numerica Corporation, Loveland, Colorado
Current Placement:	Tracking Research Lead, Standard Cognition
Award:	DARPA SMART Fellowship 2006-2010

(xi) Sandra H. Dandach, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Aug 07 - Jun 11
Initial Placement:	Senior Research Scientist, United Technology Research Center, Hartfort, Connecticut
Current Placement:	Advanced Technologies Research Lead, Meta

(xii) Joey W. Durham, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 07 - Jun 11
Initial Placement:	Research Scientist, Kiva Systems, Boston, Massachusetts
Current Placement:	Manager of Research and Advanced Development, Amazon Robotics
Award:	UCSB LEAPS Teaching Fellowship

(xiii) Fabio Pasqualetti, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Jan 08 - Sep 12
Initial Placement:	Postdoctoral Scientist, UCSB
Current Placement:	Professor, Mechanical Engineering, UC Irvine
Award:	2012 Excellence Fellowship, Mechanical Engineering, UCSB
Award:	2012 Best PhD Thesis Award, Mechanical Engineering, UCSB
Award:	Outstanding Paper Award, IEEE Transactions on Control of Network Systems, 2016

(xiv) Vaibhav Srivastava, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 07 - Dec 12
Initial Placement:	Postdoctoral Scientist and Associate Research Scholar, Princeton University
Current Placement:	Assistant Professor, Electrical and Computer Engineering, Michigan State University

(xv) Anahita Mirtabatabaei, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 07 - Jun 13
Initial Placement:	Research Engineer, Bosch Research and Technology Center, Palo Alto, California
Current Placement:	Senior Machine Learning Engineer, Glassdoor

(xvi) Florian Dörfler, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 09 - Sep 13
Award:	Regents Special International Fellowship, UCSB, 2009
Award:	Best Student Paper Award Winner, 2010 American Control Conference
Award:	O. Hugo Schuck Best Paper Award, American Automatic Control Council, 2011
Award:	Frenkel Foundation Fellowship, UCSB, 2011
Award:	Best Student Paper Award Finalist, 2013 European Control Conference
Award:	IFAC Automatica Best Paper Award, 2014
Award:	2015 Best PhD Thesis Award, Mechanical Engineering, UCSB
Award:	Guillemin-Cauer Best Paper Award, IEEE Transactions on Circuits & Systems, 2016
Initial Placement:	Assistant Professor, UC Los Angeles
Current Placement:	Associate Professor, Automatic Control Laboratory, ETH Zurich

(xvii) Rushabh Patel, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 10 - Apr 15
Award:	Northrop Grumman Fellowship, Northrop Grumman Aerospace Systems, 2010
Award:	Barpal Fellowship, 2011 and 2012
Award:	New Venture Competition 1st Place – Market Pull, UCSB, 2015
Initial Placement:	Senior Engineer, Research and Development Center, Northrop Grumman Aerospace Systems, Redondo Beach, CA
Current Placement:	Senior Director, GNC and Software at Skyryse

(xviii) John W. Simpson-Porco, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 10 - Sep 15
Award:	CCDC Outstanding Scholar Fellowship
Award:	NSERC Post-Graduate Scholarship
Award:	Frenkel Foundation Fellowship, UCSB, 2014
Award:	IFAC Automatica Best Paper Award, 2014
Award:	2015 Best PhD Thesis Award, Center for Control, Dynamical Systems and Computation, UCSB
Initial Placement:	Visiting Scientist, ETH
Current Placement:	Assistant Professor, Electrical and Computer Engineering, University of Toronto

(ix) Pushkarini Agharkar, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 11 - Dec 15
Initial Placement:	Data Scientist, airisDATA, Princeton, NJ
Current Placement:	Software Engineer, Google, Toronto

(xx) Jeffrey R. Peters, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 11 - Jun 17
Award:	CCDC Outstanding Scholar Fellowship
Award:	Winner, 2016 Mechanical Engineering Grad Slam
Initial Placement:	Senior Research Engineer and Robotics AI Expert, United Technology Research Center, East Hartford, Connecticut
Current Placement:	Technical Account Manager, Yardi Systems Inc

(xxi) Wenjun Mei, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Advisor and Chair of Doctoral Committee, Sep 11 - Mar 18
Initial Placement:	PostDoctoral Scientist, ETH, Zurich
Current Placement:	Assistant Professor, Department of Mechanics and Engineering Science, Peking University, China

(xxii) Mishel George, Ph.D., Mechanical Engineering, UCSB

Mentoring:	CoAdvisor and CoChair of Doctoral Committee with Prof. Campàs, Sep 12 - Jun 18
Award:	Winner, 2014 Mechanical Engineering Grad Slam
Initial Placement:	Research Engineer, Motion Planning and Control, Scotty Labs, San Francisco, California
Current Placement:	Software Engineer, Planner and Controls, Waymo

(xxiii) Shadi Mohagheghi, Ph.D., Electrical and Computer Engineering, UCSB

Mentoring:	Chair of Doctoral Committee, Sep 15 - Apr 20
Award:	NSF IGERT Fellowship
Initial Placement:	Navigation and Geo-Positioning Engineer, Aerospace Corporation, LA
Current Placement:	Technical Account Manager, MathWorks, Torrance, CA

(xxiv) Xiaoming Duan, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Chair of Doctoral Committee, Sep 16 - Dec 20
Initial Placement:	Postdoc, Department of Aerospace Engineering and Engineering Mechanics, UT Austin
Current Placement:	Assistant Professor, Shanghai Jiao Tong

(xxv) Elizabeth Y. Huang, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Chair of Doctoral Committee, Sep 16 - Dec 20
Initial Placement:	Research Engineer, Systems Technology Inc, Hawthorne, CA
Current Placement:	GNC Engineer, Skyryse

(xxvi) Pedro Cisneros-Velarde, Ph.D., Electrical and Computer Engineering, UCSB

Mentoring:	Chair of Doctoral Committee, Sep 16 - Jun 21
Award:	NSF IGERT Fellowship
Initial Placement:	postdoc, University of Illinois at Urbana-Champaign
Current Placement:	Machine Learning Scientist, VMware

(xxvii) Kevin D. Smith, Ph.D., Electrical and Computer Engineering, UCSB

Mentoring:	Chair of Doctoral Committee, Sep 17 - Mar 23
Award:	NSF IGERT Fellowship
Initial Placement:	Senior Algorithms Engineer, Utilidata, Providence, RI

(xxviii) Francesco Seccamonte, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Chair of Doctoral Committee, Sep 19 - Sep 23
Initial Placement:	Staff Engineer for Autonomy Algorithms, Ford, Palo Alto

(xxix) Sean Jaffe, Ph.D., Computer Science, UCSB

Mentoring:	CoChair of Doctoral Committee with Prof. Ambuj Singh, Aug 22 - Sep 24
Initial Placement:	Software Engineer, Celonis, New York City

(xxx) Veronica Centorrino, Ph.D., Scuola Superiore Meridionale, Napoli, Italy

Mentoring:	CoChair of Doctoral Committee with Prof. Giovanni Russo, Jun 21 - Jan 25
Award:	Doctoral fellowship, Modeling and Engineering Risk and Complexity, SSM
Award:	IEEE Control Systems Letters Outstanding Paper Award, 2024
Initial Placement:	Postdoctoral Researcher, Automatic Control Laboratory, ETH Zurich

(xxxi) Alexander Davydov, Ph.D., Mechanical Engineering, UCSB

Mentoring:	Chair of Doctoral Committee, Sep 20 - present
Award:	UCSB Chancellor's Fellowship, 2020-2025
Award:	NSF Graduate Research Fellowship, 2021
Award:	ACC Best Student Paper Award, Finalist, 2022
Award:	O. Hugo Schuck Best Paper Award, American Automatic Control Council, 2023
Award:	Mechanical Engineering Grad Slam Award, 2024
Award:	IEEE Control Systems Letters Outstanding Paper Award, 2024
Award:	2025 Best PhD Thesis Award, Mechanical Engineering, UCSB
Initial Placement:	Assistant Professor, Mechanical Engineering, Rice University

Former PostDoc Advisees and Employment after Graduation

(i) Jorge Cortés (Ph.D., Math, Universidad Carlos III, Spain, Sep 2001). Visiting PhD Student ('01) and PostDoc, CSL UIUC, Sep02-Sep04, Professor, Mechanical and Aerospace Engineering, University of California at San Diego

(ii) Sonia Martínez (Ph.D., Math, Universidad Carlos III, Spain, Feb 2002). Visiting PhD Student ('01) and PostDoc, UCSB, Dec03-Dec05, Associate Professor, Mechanical and Aerospace Engineering, University of California at San Diego

(iii) Kurt Plarre (PostDoc, CCDC and ICB, May06-Jul08), Data Analyst, ALMA Observatory (Chile)

(iv) Gábor Orosz (PostDoc, CCDC, Sep08-Aug10), Associate Professor, Mechanical Engineering, University of Michigan

(v) Ruggero Carli (PostDoc, CCDC, Feb08-Aug10), Associate Professor, Department of Information Engineering, Universitá di Padova (Italy)

(vi) Fabio Pasqualetti (Oct 2012 – Jun 2013), Assistant Professor, Mechanical Engineering, UC Riverside

(vii) Peng Jia (Ph.D., Electrical and Computer Engineering, McGill University, 2010; Postdoc and Assistant Project Scientist, Feb 2012 – Aug 2016), Data Analyst, Discover Financial Services, Arizona

(viii) Dario Paccagnan, (Ph.D., ETH Zürich, Automatic Control Laboratory; Postdoc, Feb 2019 – Aug 2020), Assistant Professor, Computer Science, Imperial College London

(ix) Saber Jafarpour, (Ph.D., Applied Mathematics, Queen's University; Postdoc Jul 2016 - Jul 2021), Postdoc, GeorgiaTech

(x) Robin Delabays, (Ph.D., Mathematics, University of Geneva and University of Applied Sciences of Western Switzerland, 2018; Postdoc, Oct 20 - Aug 22), Assistant Professor, Energy Environment, HES-SO in Sion, Switzerland

Former M.S. Students and First Employment after Graduation

(i) Peter K. Sochacki (M.S., ECE UIUC, Jan 2000), Anderson Engineering

(ii) Arvind Hosagrahara, (M.S., GE UIUC, Jun 2001), MathWorks

(iii) Ross Gadient (M.S., GE UIUC, Jun 2001), Boeing

(iv) Timur Karatas (M.S., GE UIUC, Jun 2001)

(v) Craig Robinson (M.S., GE UIUC, Dec 2003), PhD student at UIUC

(vi) Mark Disch (M.S., ECE UIUC, Jun 2004), GE Energy

(vii) Sulema Aranda (M.S., ECE UIUC, Aug 2004), Lockheed Martin

(viii) Chunkai Gao (M.S., ME UCSB, Sep 2007), PhD student at UCSB

(ix) Nathan Owen (M.S., ME UCSB, Jun 2009), Boeing Space & Intelligence Systems

(x) Giulia Piovan (M.S., ME UCSB, Jun 2010), PhD student at UCSB

(xi) Lee Nguyen (M.S., ME UCSB, Jun 2010)

(xii) Markus Spindler (M.S., University of Stuttgart, Sep 2011), Alstom

(xiii) Diego Romeres (M.S., Universita di Padova, Dec 2012), PhD student at Universita di Padova

(xiv) Hedi Bouattour (M.S., University of Stuttgart, May 2013), Siemens

(xv) Basilio Gentile (M.S., Universita di Padova, Oct 2013), PhD student at ETH Zurich

(xvi) Benjamin Del Rosario (M.S., ME UCSB, December 2014), Vehicle Guidance Navigation and Control Engineer, Northrop Grumman Corporation

(xvii) Deepti Kannapan, (M.S., ME UCSB, June 2015), Member of Technical Staff, Aerospace Corporation, El Segundo, California

(xviii) Axel Haaker, (M.S., ME UCSB, Dec 2016), Assembler I, Medtronic Brain Therapies - Neurosurgery, Goleta

(xix) Franklin Zheng, (M.S., ME UCSB, Jun 2017), Field Support Engineer, Astronics

(xx) Celeste Bean, (MS candidate, ECE UCSB, June 2018), Electrical Engineer II, Benchmark Electronics, Tempe AZ

(xxi) Sean Wang, (MS candidate, ME UCSB, June 2018), PhD student at CMU. Recipient of 2017 Tirrell Award for Distinction in Undergraduate Research.

Professional Service

Service to IEEE:
Elected President-Elect/President/President-Past, IEEE Control Systems Society, Jan 2017 - Dec 2019
Vice-President for Technical Activities, IEEE Control Systems Society, Jan 2011 – Dec 2012
Vice-President for Publications, IEEE Control Systems Society, Jan 2013 – Dec 2014
Long-Range Planning Committee, IEEE Control Systems Society, Jan 2011 – Dec 2014
Program Chair, 2016 IEEE Conference in Decision and Control, 2013-2016
Elected Member, Board of Governors, IEEE Control Systems Society, 2007-2009, 2011-2013, 2016-18
Chair, TC on Manufacturing Automation and Robotic Control, IEEE Control System Society, Jul 2004 - Dec 2008

Service to SIAM:
Elected Chair, SIAM Activity Group on Control and Systems Theory (SIAG CST), Jan 2020 - Dec 2021
Chair, SIAG CST, Executive Committee, Jan 2020 - Dec 2021
Member, Nominating Committee, Jan 2023 - Aug 2024
Mamber, Steering Committee, Jan 2024 - Dec 2027

Service to AACC:
Director, American Automatic Control Council, Jan-Dec 2018 and Jan 2020 - Dec 25
Ad Hoc Committee for MECC Conference-Journal Submission, American Automatic Control Council, 2022-2023
Member, Financial Committee, American Automatic Control Council, Sep 2022 - present
Member, Nomination Committee, 2025

Service to NetSci:
Chair, Outreach and Funding Committee, Network Science Society, 2022-2024
CoChair, Publications Committee, Network Science Society, 2025 - present

Member, IEEE, 1994-present (Member since 1994, Senior Member since 2003, Fellow since 2010)
Member, SIAM, 2000-present (Lifetime since 2010, Fellow since 2019)
Member, ASME, 2009-present (Fellow since 2022)
Member, AAAS, 2014-present
Member, NetSci, 2023-present (Fellow since 2025)
Member, Panel on Mechanical Science and Engineering at the Army Research Laboratory, organized by the National Academies of Sciences, Engineering, and Medicine, June 2016

Editorships:
- Editorial Board, Mathematics of Control, Signals, and Systems, Jan 2011 - Dec 2013
- Editorial Board, IEEE Transactions on Automatic Control, Jan 2005 - Dec 2008
- Editorial Board, SIAM Journal of Control and Optimization, Jan 2005 - Dec 2010
- Editorial Board, ESAIM: Control, Optimization, and the Calculus of Variations, Jan 2003 - Dec 2006
- Conference Editorial Board, IEEE Control System Society, Sep 1999 - May 2005
- Special issue of SIAM J. Control and Optim., "Control and Optimization in Cooperative Networks," Jan 2009
- Special issue of IEEE T. Autom Cntrl, "Security & Privacy of Distributed Algorithms and Network Systems", 2019

Conference Chair or Co-Chair
- CCDC Workshop on Vistas in Control. UC Santa Barbara, May 2013
- IFAC Workshop on Distributed Estimation and Control in Networked Systems, Santa Barbara, Sep 2012
- Santa Barbara Workshop: Decision, Dynamics and Control in Multi-Agent Systems, UC Santa Barbara, Jun 2011
- IFAC on Workshop Lagrangian & Hamiltonian Methods in Nonlinear Control, Nagoya, Jul 2006

Workshop Organizer or Organizing Committee:
- CDC Workshop on Neurocomputation and Dynamics, Rio, Brazil, Dec 2025
- CDC Workshop on Contraction Theory, Milan, Italy, Dec 2024
- ACC Workshop on Contraction Theory, San Diego, CA, USA, May 2023
- CDS 20th Anniversary Workshop, Caltech, Pasadena, CA, USA, Aug 2014
- SIAM Conference on Control & Its Applications, San Diego, CA, USA, Jul 2013
- UCSB CCDC Workshop on Vistas in Control, May 2013
- Invited Tutorial Session on "Coupled Oscillators," IEEE Control and Decision Conference, Dec 2012

UCSB CCDC Workshop on Vistas in Control, Nov 2011
Workshop on "Dynamic Vehicle Routing," Robotics Science and Systems, Jun 2011
Workshop on "Dynamic Vehicle Routing," American Control Conference, Jun 2010
Invited MiniTutorial at SIAM Conference on Applications of Dynamical Systems, May 2009
Workshop on "Distributed Control of Robotic Networks," IEEE Control and Decision Conference, Dec 2008
Workshop on "Cooperative MultiAgent Systems," Centro De Giorgi, Pisa, Dec 2007
MiniSymposium at SIAM Conference on Applications of Dynamical Systems, May 2005
Workshop on "Geometric Control of Mechanical Systems," IEEE Control and Decision Conference, Dec 2004
ONR Workshop on Autonomous and Intelligent Systems, UIUC, May 2003
Workshop on Nonlinear Control of Mechanical Systems, UIUC, Oct 2002
MiniSymposium at SIAM Conference on Control and Its Applications, Jul 2001
IFAC Workshop on Lagrangian and Hamiltonian Methods, Princeton, Mar 2000
Midwest Mechanical Motion Meeting, Fall 1999, 2000, 2001, 2002
Workshop on Mechanics, Dynamics and Control, Caltech, Dec 1997

Program Committees:
2001, 2003 and 2007 IEEE American Control Conference
2004, 2005, 2007, 2008, 2010 and 2012 IEEE Control and Decision Conference
2003 IEEE/RSJ International Conf. on Intelligent Robots & Systems
2006, 2014 Mediterranean Conference on Control Applications
2006 IEEE International Conference on Robotics and Automation
2006 Robotics: Science and Systems Conference
2006 IFAC Workshop on Multivehicle Systems
2009 Conference on Robot Communication and Coordination

Detailed list of IEEE CSS Activities 2017:

- President-Elect and Member of the Executive Committee
- Chair, Long Range Planning Committee
- Alternate Director, American Automatic Control Council
- Elected Member, Board of Governors
- Member, Outreach Task Force

Detailed list of IEEE CSS Activities 2018:

- President and Chair of the Executive Committee
- Member, Long Range Planning Committee
- Member, Nominating Committee
- IEEE Director, American Automatic Control Council
- Elected Member, Board of Governors

Detailed list of IEEE CSS Activities 2019:

- Past President
- Member, Long Range Planning Committee
- Chair, Nominating Committee

University Service

Mechanical Engineering Department
ViceChair, Jul 2006 - Jun 2010
Graduate Advisor and Chair of the ME Graduate Committee, Jul 2006 - Jun 2010
Member, ME Graduate Committee, Sep 2005 - Jun 2006 & Sep 2010 - Jun 2012
Member, ME Space Committee, Jul 2004 - Jun 2008, (Chair) Jul 2008- Jun 2009, & Jul 2009 - Jun 2010
Member, Promotions/Merit Committee, Jul 2010– Jun 2011
Member, Faculty Search Committee, Jul 2012 - Jun 2013

UCSB Mechanical Engineering Department Chair, Jul 2013 - Jun 2017
Chair, MECE13 Search Cmte, Jul 2013 - Jun 2015 (no resulting hire)
Member, MECE11 Search Cmte, Jul 2013 - Jun 2014 (hire: Prof. P. Luzzatto-Fegiz, Fluids)
Member, MECE14 Search Cmte, Jul 2013 - Jun 2014 (hire: Lecturer T. Susko, Design)
Member, MECE15 Search Cmte, Jul 2014 - Jun 2015 (hire: Prof. S. Daly & I. Beyerlein, Mechanics of Materials)
Member, MECE16 Search Cmte, Jul 2015 - Jun 2016 (hire: Profs. E. Hawkes, Soft Robotics)
Member, MECE17a Search Cmte, Jul 2016 - Jun 2017 (hire: Prof. B. Liao, Nanoscale Thermal Sciences)
Member, MECE17 Search Cmte, Jul 2016 - Dec 2017 (hire: Profs. A. Sauret & E. Dressaire, Fluids)†
Member, MECE13 Search Cmte, Jul 2015 - Feb 2018 (hire: Prof. B. Pruitt, MechanoBiology and NanoScience)†
(† : recruitments completed during successor's term)
Member, Merit and Promotion Committe, Jul 2013 - Jun 2017
Member, ABET Accreditation Renewal Committe, Jul 2014 - Jun 2015
Chair, 50th Anniversary Celebration Organizing Committee, Jul 2014 - Jun 2015
Member, PRP Preparation Committe, Jul 2014 - Jun 2017
Member, Professional Degree Program Committe, Jul 2014 - Jun 2015

Between July 2013 and June 2017, Professor Bullo served as Chair of the Mechanical Engineering Department at UC Santa Barbara. Under his guidance, the department hired nine new faculty members including four faculty from underrepresented groups. Regarding educational programs, the department started a new 5-year combined BS/MS program and a new multidisciplinary capstone projects curriculum. The department received a full 6-year ABET re-accreditation as well as outstanding evaluations from a 2017 PRP review. Regarding facilities management, the department invested in broad range of renovations, including all undergraduate laboratories, classroom and conference rooms, all common areas, the main office, the former ME cleanroom facility, and two large student office laboratories. Regarding governance and finances, the department developed a broad range of new and revised policies, including bylaws, workload policy, teaching evaluations, and space use. Finally, regarding communication and development, the department embarked on a comprehensive marketing effort with redesigned website, logos, departmental posters, document templates, and fliers. The department organized a high-visibility 50th anniversary celebration in 2014, improved the visibility of the yearly design fair, and started a Distinguished Alumni Award.

UCSB College of Engineering
Member, Faculty Executive Committee, Sep 2006 - Aug 2008 & Sep 2010 - Aug 2012
Member, Graduate Outreach and Advancement Committee, Jan 2007 - Jun 2010

UCSB Academic Senate and UCSB-wide Committees
Member, GMA Committee, Winter 2016
Member, Academic Senate Faculty Legislature, 2016-17, 2017-18
Member, Marine Science Institute Advisory Committee, 2016-2019
Member/ViceChair/Chair, Program Review Panel, 2018/19, 2019/20, and 2020/21
Member/ViceChair/Chair, Council on Planning and Budget, 2022/23, 2023/24, 2024/25
Member, Campus Planning Committee, 2024/25
Member, Campus Renewal Committee, 2024/25
Member, Board of Trustees, UCSB Foundation, 2024/25
Member, Chancellor's Coordinating Committee on Budget Strategy, 2024/25
Advisor to the EVC and Provost, 2025/26

UC Academic Senate
Member, University Committee on Planning and Budget, 2024/25
Chair, UC EAP Finance SubCommittee, 2024/25

Center for Control, Dynamical Systems and Computation
Associate Director, Jul '11 - Jun '13
Organizer, Seminar Series, Spring '06
Organizer, Workshop on Vistas in Control, Nov '11 & May '13

University Service at UIUC, 1998-2004
GE Teaching Committee, Fall 2000
GE Graduate Committee, Feb 1999 - Jun 2004
CSL Decision and Control Seminar Series, Co-organizer, Feb 1999 - Jun 2004

Publications

Manuscripts are listed in reverse chronological order. All manuscripts and related presentations are available electronically at https://fbullo.github.io/papers.
Citation records are available at: http://scholar.google.com/citations?hl=en&user=jfehy-UAAAAJ.

Books

- F. Bullo and A. D. Lewis. *Geometric Control of Mechanical Systems*. Springer, 2004. ISBN 0-387-22195-6. DOI: 10.1007/978-1-4899-7276-7. URL https://fbullo.github.io/gcms
- F. Bullo, J. Cortés, and S. Martínez. *Distributed Control of Robotic Networks*. Princeton University Press, 2009b. ISBN 978-0-691-14195-4. URL https://fbullo.github.io/dcrn (37.1K downloads during period 1jun08-15aug21)
- F. Bullo. *Lectures on Network Systems*. Kindle Direct Publishing, 1.7 edition, Apr. 2024. ISBN 978-1986425643. URL https://fbullo.github.io/lns (9.4K downloads during period 1jun16-31dec24)
- F. Bullo. *Contraction Theory for Dynamical Systems*. Kindle Direct Publishing, 1.3 edition, 2026. ISBN 979-8836646806. URL https://fbullo.github.io/ctds (2.6K downloads during period 1jun22-31dec24)

Unpublished Lecture Notes

- F. Bullo and S. L. Smith. *Lectures on Robotic Planning and Kinematics*. Unpublished Manuscript, .94 edition, 2025. URL https://fbullo.github.io/lrpk (2.6K downloads during period 1jul2010-31dec24)
- F. Bullo. *Lectures on Neural Dynamics*. Unpublished Manuscript, 2025. URL https://fbullo.github.io/lnd

Edited Books and Proceedings

- F. Bullo and K. Fujimoto, editors. *Lagrangian and Hamiltonian Methods for Nonlinear Control 2006*, volume 366 of *Lecture Notes in Control and Information Sciences*, 2007. Springer. ISBN 978-3-540-73889-3. DOI: 10.1007/978-3-540-73890-9. (Proceedings of the 3rd IFAC Workshop, Nagoya, Japan, July 2006)
- F. Bullo, J. Cortés, J. P. Hespanha, and P. Tabuada, editors. *Proceedings of the 3rd IFAC Workshop on Distributed Estimation and Control in Networked Systems*, 2012b. IFAC. ISBN 978-3-902823-22-9. (Santa Barbara, California, USA, September 2012)

Special Issues

- F. Bullo, J. Cortés, and B. Piccoli. Special issue on control and optimization in cooperative networks. *SIAM Journal on Control and Optimization*, 48(1):vii–vii, 2009c. DOI: 10.1137/SJCODC000048000001000vii000001
- Z. Chen, F. Pasqualetti, J. He, P. Cheng, H. L. Trentelman, and F. Bullo. Guest editorial: Special issue on security and privacy of distributed algorithms and network systems. *IEEE Transactions on Automatic Control*, 65(9): 3725–3727, 2020b. DOI: 10.1109/TAC.2020.3004329
- C. Beck, F. Bullo, G. Como, K. Drakopoulos, D. H. Nguyen, C. Nowzari, V. M. Preciado, and S. Sundaram. Special issue on mathematical modeling, analysis, and control of epidemics. *SIAM Journal on Control and Optimization*, 60(2):Si–Sii, 2022. DOI: 10.1137/22N975470

Journal Articles

[212] L. Cothren, F. Bullo, and E. Dall'Anese. Online feedback optimization and singular perturbation via contraction theory. *SIAM Journal on Control and Optimization*, Aug. 2024. DOI: 10.48550/arXiv.2310.07966. To appear

[211] V. Centorrino, F. Bullo, and G. Russo. Similarity matching networks: Hebbian learning and convergence over multiple time scales. *Neural Computation*, June 2025. DOI: 10.48550/arXiv.2506.06134. To appear

[210] A. V. Proskurnikov and F. Bullo. Regular pairings for non-quadratic Lyapunov functions and contraction analysis. *SIAM Journal on Control and Optimization*, 2026. DOI: 10.48550/arXiv.2408.17350. To appear

[209] G. Diaz-Garcia, F. Bullo, and J. R. Marden. Strategic coalitions in networked contest games. *IEEE Transactions on Automatic Control*, Aug. 2024. DOI: 10.1109/TAC.2025.3623942. To appear

[208] R. Ofir, F. Bullo, and M. Margaliot. A sufficient condition for 2-contraction of a feedback interconnection. *IEEE Transactions on Automatic Control*, 71(2), 2026. DOI: 10.1109/TAC.2025.3602711. To appear

[207] A. Davydov, V. Centorrino, A. Gokhale, G. Russo, and F. Bullo. Time-varying convex optimization: A contraction and equilibrium tracking approach. *IEEE Transactions on Automatic Control*, 70(11):7446–7460, 2025a. DOI: 10.1109/TAC.2025.3576043

[206] S. Betteti, G. Baggio, F. Bullo, and S. Zampieri. Firing rate models as associative memory: Excitatory-inhibitory balance for robust retrieval. *Neural Computation*, pages 1–32, 08 2025b. DOI: 10.1162/neco.a.28

[205] Y. John, G. Diaz-García, X. Duan, J. R. Marden, and F. Bullo. A stochastic surveillance Stackelberg game: Co-optimizing defense placement and patrol strategy. *IEEE Transactions on Automatic Control*, 70(8):5468–5474, 2025. DOI: 10.1109/TAC.2025.3549295

[204] S. Betteti, G. Baggio, F. Bullo, and S. Zampieri. Input-driven dynamics for robust memory retrieval in Hopfield networks. *Science Advances*, 11(17), 2025a. DOI: 10.1126/sciadv.adu6991

[203] G. Chen, W. Su, W. Mei, and F. Bullo. Convergence of the heterogeneous Deffuant-Weisbuch model: A complete proof and some extensions. *IEEE Transactions on Automatic Control*, 70(2):877–888, 2025a. DOI: 10.1109/TAC.2024.3442952

[202] Z. Marvi, F. Bullo, and A. G. Alleyne. Robust and exponential stability in barrier-certified systems via contracting piecewise smooth dynamics. *IEEE Control Systems Letters*, 8:3279–3284, 2024b. DOI: 10.1109/LCSYS.2024.3524369

[201] A. Davydov, A. V. Proskurnikov, and F. Bullo. Non-Euclidean contraction analysis of continuous-time neural networks. *IEEE Transactions on Automatic Control*, 70(1):235–250, 2025b. DOI: 10.1109/TAC.2024.3422217

[200] A. Gokhale, A. Davydov, and F. Bullo. Proximal gradient dynamics: Monotonicity, exponential convergence, and applications. *IEEE Control Systems Letters*, 8:2853–2858, 2024. DOI: 10.1109/LCSYS.2024.3516632

[199] J. Cheng, G. Chen, W. Mei, and F. Bullo. Multidimensional opinion dynamics with heterogeneous bounded confidences and random interactions. *Automatica*, 172:112002, 2025. DOI: 10.1016/j.automatica.2024.112002

[198] R. Yan, X. Duan, R. Zou, X. He, Z. Shi, and F. Bullo. Multiplayer homicidal chauffeur reach-avoid games: A pursuit enclosure function approach. *Automatica*, 167:111770, 2024. DOI: 10.1016/j.automatica.2024.111770

[197] W. Liu, J. Sun, G. Wang, F. Bullo, and J. Chen. Learning robust data-based LQG controllers from noisy data. *IEEE Transactions on Automatic Control*, 69(12):8526–8538, 2024. DOI: 10.1109/TAC.2024.3409749

[196] A. Davydov, S. Jafarpour, A. V. Proskurnikov, and F. Bullo. Non-Euclidean monotone operator theory and applications. *Journal of Machine Learning Research*, 25(307):1–33, 2024. DOI: 10.48550/arXiv.2303.11273. URL http://jmlr.org/papers/v25/23-0805.html

[195] W. Mei, J. M. Hendrickx, G. Chen, F. Bullo, and F. Dörfler. Convergence, consensus and dissensus in the weighted-median opinion dynamics. *IEEE Transactions on Automatic Control*, 69(10):6700–6714, 2024. DOI: 10.1109/TAC.2024.3376752

[194] A. Davydov and F. Bullo. Perspectives on contractivity in control, optimization and learning. *IEEE Control Systems Letters*, 8:2087–2098, 2024a. DOI: 10.1109/LCSYS.2024.3436127

[193] V. Centorrino, A. Davydov, A. Gokhale, G. Russo, and F. Bullo. On weakly contracting dynamics for convex optimization. *IEEE Control Systems Letters*, 8:1745–1750, 2024b. DOI: 10.1109/LCSYS.2024.3414348

[192] A. Davydov and F. Bullo. Exponential stability of parametric optimization-based controllers via Lur'e contractivity. *IEEE Control Systems Letters*, 8:1277–1282, 2024b. DOI: 10.1109/LCSYS.2024.3408110

[191] Z. Marvi, F. Bullo, and A. G. Alleyne. Control barrier proximal dynamics: A contraction theoretic approach for safety verification. *IEEE Control Systems Letters*, 8:880–885, 2024a. DOI: 10.1109/LCSYS.2024.3402188

[190] V. Centorrino, A. Gokhale, A. Davydov, G. Russo, and F. Bullo. Positive competitive networks for sparse reconstruction. *Neural Computation*, 36(6):1163–1197, 2024c. DOI: 10.1162/neco_a_01657

[189] G. De Pasquale, K. D. Smith, F. Bullo, and M. E. Valcher. Dual seminorms, ergodic coefficients, and semicontraction theory. *IEEE Transactions on Automatic Control*, 69(5):3040–3053, 2024. DOI: 10.1109/TAC.2023.3302788

[188] V. Centorrino, F. Bullo, and G. Russo. Modelling and contractivity of neural-synaptic networks with Hebbian learning. *Automatica*, 164:111636, 2024a. DOI: 10.1016/j.automatica.2024.111636

[187] O. Dalin, R. Ofir, E. Bar Shalom, A. Ovseevich, F. Bullo, and M. Margaliot. Verifying k-contraction without computing k-compounds. *IEEE Transactions on Automatic Control*, 69(3):1492–1506, 2024. DOI: 10.1109/TAC.2023.3326058

[186] A. Gokhale, A. Davydov, and F. Bullo. Contractivity of distributed optimization and Nash seeking dynamics. *IEEE Control Systems Letters*, 7:3896–3901, 2023. DOI: 10.1109/LCSYS.2023.3341987

[185] W. Liu, J. Sun, G. Wang, F. Bullo, and J. Chen. Data-driven self-triggered control via trajectory prediction. *IEEE Transactions on Automatic Control*, 68(11):6951–6958, 2023b. DOI: 10.1109/TAC.2023.3244116

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[183] S. Jafarpour, A. Davydov, and F. Bullo. Non-Euclidean contraction theory for monotone and positive systems. *IEEE Transactions on Automatic Control*, 68(9):5653–5660, 2023. DOI: 10.1109/TAC.2022.3224094

[182] W. Liu, J. Sun, G. Wang, F. Bullo, and J. Chen. Data-driven resilient model predictive control under denial-of-service. *IEEE Transactions on Automatic Control*, 68(8):4722–4737, 2023a. DOI: 10.1109/TAC.2022.3209399

[181] Y. Tian, L. Wang, and F. Bullo. How social influence affects the wisdom of crowds in influence networks. *SIAM Journal on Control and Optimization*, 61(4):2334–2357, 2023. DOI: 10.1137/22M1492751

[180] G. Diaz-García, F. Bullo, and J. R. Marden. Distributed Markov chain-based strategies for multi-agent robotic surveillance. *IEEE Control Systems Letters*, 7:2527–2532, 2023a. DOI: 10.1109/LCSYS.2023.3288492

[179] A. V. Proskurnikov, A. Davydov, and F. Bullo. The Yakubovich S-Lemma revisited: Stability and contractivity in non-Euclidean norms. *SIAM Journal on Control and Optimization*, 61(4):1955–1978, 2023. DOI: 10.1137/22M1512600

[178] K. D. Smith and F. Bullo. Convex optimization of the basic reproduction number. *IEEE Transactions on Automatic Control*, 68(7):4398–4404, 2023a. DOI: 10.1109/TAC.2022.3212012

[177] P. Cisneros-Velarde and F. Bullo. Distributed Wasserstein barycenters via displacement interpolation. *IEEE Transactions on Control of Network Systems*, 10(2):785–795, 2023. DOI: 10.1109/TCNS.2022.3210341

[176] M. Coraggio, S. Jafarpour, F. Bullo, and M. di Bernardo. Minimax flow over acyclic networks: Distributed algorithms and microgrid application. *IEEE Transactions on Control of Network Systems*, 10(2):937–946, 2023. DOI: 10.1109/TCNS.2022.3212638

[175] V. Centorrino, A. Gokhale, A. Davydov, G. Russo, and F. Bullo. Euclidean contractivity of neural networks with symmetric weights. *IEEE Control Systems Letters*, 7:1724–1729, 2023. DOI: 10.1109/LCSYS.2023.3278250 **(IEEE Control Systems Letters Outstanding Paper Award, 2024)**

[174] R. Delabays and F. Bullo. Semicontraction and synchronization of Kuramoto-Sakaguchi oscillator networks. *IEEE Control Systems Letters*, 7:1566–1571, 2023. DOI: 10.1109/LCSYS.2023.3275169

[173] E. Y. Huang, D. Paccagnan, W. Mei, and F. Bullo. Assign and appraise: Achieving optimal performance in collaborative teams. *IEEE Transactions on Automatic Control*, 68(3):1614–1627, 2023. DOI: 10.1109/TAC.2022.3156879

[172] K. D. Smith and F. Bullo. Contractivity of the method of successive approximations for optimal control. *IEEE Control Systems Letters*, 7:919–924, 2023b. DOI: 10.1109/LCSYS.2022.3228723

[171] R. Yan, X. Duan, Z. Shi, Y. Zhong, and F. Bullo. Matching-based capture strategies for 3D heterogeneous multiplayer reach-avoid differential games. *Automatica*, 140:110207, 2022a. DOI: 10.1016/j.automatica.2022.110207

[170] P. Cisneros-Velarde, S. Jafarpour, and F. Bullo. Contraction theory for dynamical systems on Hilbert spaces. *IEEE Transactions on Automatic Control*, 67(12):6710–6715, 2022b. DOI: 10.1109/TAC.2021.3133270

[169] A. Davydov, S. Jafarpour, and F. Bullo. Non-Euclidean contraction theory for robust nonlinear stability. *IEEE Transactions on Automatic Control*, 67(12):6667–6681, 2022b. DOI: 10.1109/TAC.2022.3183966

[168] K. D. Smith, S. Jafarpour, A. Swami, and F. Bullo. Topology inference with multivariate cumulants: The Möbius inference algorithm. *IEEE/ACM Transactions on Networking*, 30(5):2102–2116, 2022b. DOI: 10.1109/TNET.2022.3164336

[167] R. Delabays, S. Jafarpour, and F. Bullo. Multistabilities and anomalies in oscillator models of lossy power grids. *Nature Communications*, 13:5238, 2022. DOI: 10.1038/s41467-022-32931-8

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Opinion Editorials

- F. Bullo. The visible values of volunteering in the hidden technology world (President's Message). *IEEE Control Systems*, 38(1):9–10, 2018d. DOI: 10.1109/MCS.2017.2766302
- F. Bullo. On the developing world of copyrights (President's Message). *IEEE Control Systems*, 38(2):9–10, 2018a. DOI: 10.1109/MCS.2017.2786439
- F. Bullo. On the tools of our trade (President's Message). *IEEE Control Systems*, 38(3):9–11, 2018e. DOI: 10.1109/MCS.2018.2810482
- F. Bullo. Nurturing diversity and reducing implicit evaluation bias (President's Message). *IEEE Control Systems*, 38(4):8–13, 2018b. DOI: 10.1109/MCS.2018.2830018
- F. Bullo. Getting it write: Tips for effective communication (President's Message). *IEEE Control Systems*, 38(5): 8–9, 2018f. DOI: 10.1109/MCS.2018.2851001
- F. Bullo. A year in review (President's Message). *IEEE Control Systems*, 38(6):10–14, 2018c. DOI: 10.1109/MCS.2018.2866644

Research Funding

Completed Projects

(G1) University of Illinois Research Board, *Stability and Locomotion in Robotic Mechanisms and Autonomous Vehicles*, F. Bullo, $25K, 1/99 – 01/00.

(G2) Army Research Office, DAAD 190110716, *Trajectories for Locomotion Systems: A Geometric and Computational Approach via Series Expansions*, F. Bullo, $210K, 9/01–8/04.

(G3) National Science Foundation, Robotics and Human Augmentation Program, IIS-0118146, *Algorithmic and Differential-Geometric Trajectory Design.* F. Bullo (PI, $155K) and S. M. Lavalle (Co-PI), total amount $300K, 9/01–8/04.

(G4) National Science Foundation, Dynamic Systems and Control Program, CMS-0100162, *Perturbation Methods for Nonlinear Control of Lagrangian Systems,* F. Bullo, $163K, 9/01–8/04.

(G5) National Science Foundation, Control, Networks, and Computational Intelligence Program, ECS-0122412, *Layered Architectures for Complex Networked Systems,* M. W. Spong (PI), F. Bullo (Co-PI, $67K), total amount $270K, 9/01–8/04.

(G6) University of Illinois Initiative in Trustworthy Networked Systems, *AeroTruNet: A Trustworthy Networked Aerospace System*, E. Frazzoli (PI), F. Bullo (Co-PI), $40K, 10/02–10/03.

(G7) Office of Naval Research, Mathematical, Computer, and Information Sciences Division, FY03 Young Investigator Program, N00014-03-1-0512, *Distributed and Adaptive Coordination Algorithms for Mobile Sensing Networks*, F. Bullo, $300K, 6/03–5/06.

(G8) Defense Advanced Research Projects Agency and Air Force Office of Scientific Research, MURI Program, F49620-02-1-0325, *Cooperative Networked Control of Dynamical Peer-to-Peer Vehicle Systems*, Consortium of UIUC (lead), Stanford, MIT, G.E. Dullerud (PI), F. Bullo (Co-PI, $300K), total amount $5M, 5/02–8/07.

(G9) National Science Foundation, Dynamic Systems and Control Program, CMS-0442041 (former CMS-0301423) *Collaborative Research: Kinematic Reductions for Underactuated Mechanical Systems*, F. Bullo, $160K, 9/03 – 8/07.

(G10) National Science Foundation, Robotics and Human Augmentation Program, IIS-0525543 (former IIS-0330008) *SENSORS: Cooperative Robotics and Geometric Optimization for Mobile Sensors*, F. Bullo, $300K, 9/03 – 8/08.

(G11) National Science Foundation, Dynamic Systems and Control Program, CMS-0626457 *Distributed Illumination Problems for Visually-guided Agents*, F. Bullo, $240K, 9/06 – 8/09.

(G12) Office of Naval Research, DURIP Program, N00014-08-1-0791, *DURIP: Large-Scale Multimodal Wireless Sensor Network*, B. S. Manjunath (PI), F. Bullo (Co-PI), total amount $655K, 5/08–4/09.

(G13) Army Research Office, Institute for Collaborative Biotechnology, W911NF-09-D-0001, *Bio-inspired Stochastic Search and Decision Making for Robotic Networks*, F. Bullo, total amount $350K, 6/07–12/09.

(G14) Office of Naval Research, Mathematical, Computer, and Information Sciences Division, N00014-07-1-0721, *Algorithmic Coordination in Robotic Networks*, F. Bullo, $304K, 1/07–6/10.

(G15) National Science Foundation, Division of Computer and Network Systems, CNS-0834446, *Collaborative Research: CSR-EHCS(EHS), TM: Distributed Sensing on Camera Sensor Networks via Robust Dynamic Consensus on Manifolds*, F. Bullo, $163K, 9/08–8/11.

(G16) Army Research Office, MURI Program, W911NF-05-1-0219, *Scalable Swarms of Autonomous Robots and Mobile Sensors*, Consortium of UPenn (lead), UC Santa Barbara, MIT, Yale, UC Berkely, V. Kumar (PI), F. Bullo (Co-PI, $725K), total amount $5M, 5/05–7/12.

(G17) Air Force Office of Scientific Research, MURI Program, FA9550-07-1-0528 *Behavioral Dynamics in the Cooperative Control of Mixed Human/Robotics Teams*, Consortium of BU (lead), Princeton, University of Washington, UCSB, J. Baillieul (PI), F. Bullo (Co-PI, $742K), total amount $7.3M, 5/07–6/11.

(G18) National Science Foundation, Robotics and Human Augmentation Program, IIS-0904501 *RI: Medium: Collaborative Research: Minimalist Mapping and Monitoring*, S. Suri (PI) and F. Bullo (Co-PI, $432K), total amount $1.28M, 8/09–7/13.

(G19) Army Research Office, Institute for Collaborative Biotechnology, W911NF-09-D-0001, *Bio-inspired Information Propagation and Opinion Dynamics in Social Networks* and *Opinion Dynamics in Social Networks*, F. Bullo, $492K, 12/09–11/13.

(G20) Army Research Office, W911NF-11-1-0092, *Dynamic Routing and Coordination in Multi-Agent Networks*, F. Bullo, $500K, 3/11–2/15.

(G21) Army Research Office, Institute for Collaborative Biotechnology, W911NF-09-D-0001, *Opinions and Influence Dynamics in Socio-Cognitive Networks*, F. Bullo, $225K, 12/13–6/15.

(G22) National Science Foundation, CyberPhysical Program, CPS-1035917 *CPS: Medium: Collaborative Research: Dynamic Routing and Robotic Coordination for Oceanographic Adaptive Sampling*, F. Bullo (PI, $360K) and S. Suri (Co-PI), total amount $1.05M, 10/10–9/15.

(G23) National Science Foundation, CyberPhysical Program, CPS-1135819 *CPS: Medium: Collaborative Research: The CyberPhysical Challenges of Transient Stability and Security in Power Grids*, F. Bullo (PI, $375K), total amount $1.12M, 9/11–9/15.

(G24) Army Research Office, W911NF-15-1-0274, *Dynamic Processes over Dynamic Social Networks*, F. Bullo, (PI, $50K), 7/15–3/16.

(G25) Army Research Office, Institute for Collaborative Biotechnology, W911NF-09-D-0001, *Supervisory Controller for Optimal Role Allocation for Cueing of Human Operators (SCORCH)*, F. Bullo, (Co-PI, $250K), total amount $2.1M, 4/14–6/18.

(G26) Army Research Office, W911NF-15-1-0577 *Validating Team Performance Models and Enlarging the Scale of Human Subject Experiments*, A. K. Singh (PI), F. Bullo (Co-PI, $166K), total amount $500K, 3/18-9/18.

(G27) Department of Energy, SunShot National Laboratory Multiyear Partnership (SuNLaMP), XAT-6-62531-01, *Stabilizing the Power System in 2035 and Beyond*, Consortium of National Renewable Energy Laboratory (lead), UCSB and University of Minnesota. Brian Johnson (PI), F. Bullo (Co-PI, $342K), total amount $3.8M, 2/16–3/19.

(G28) Air Force Office of Scientific Research, FA9550-15-1-0138, *Stochastic Surveillance and Distributed Coordination*, F. Bullo, (PI, $450K), 6/15–5/20.

(G29) Army Research Office, MURI Program, W911NF-15-1-0577, *QUANTA: Quantitative Network-based Models of Adaptive Team Behavior*, Consortium of UCSB (lead), MIT, Northwestern, USC. A. K. Singh (PI), F. Bullo (Co-PI, $1,033K), total amount $6.25M, 8/15–4/21.

(G30) Defense Threat Reduction Agency, HDTRA1-19-1-0017, *Inferring Network Structure and Flows Using Partial Observations*, UCSB and ARL, A. K. Singh (PI), F. Bullo (Co-PI, $466K), total amount $1.4M, 5/14/19-6/2/22.

(G31) U.S. Army Engineer Research and Development Center (ERDC), W912HZ-22-2-0010, *Inference of Missing Edges and Flows in Infrastructure Networks*, UCSB, A. K. Singh (PI), F. Bullo (Co-PI, $225K), total amount $450K, 4/1/22-3/31/25.

(G32) Toyota Central Research and Development Lab. *Visiting Scientist Agreement*, F. Bullo (PI), 10/1/24–3/31/25

(G33) Toyota Central Research and Development Lab. *Contractivity Analysis of Implicit Lur'e Models and Optimization-Based Control Systems*, F. Bullo (PI), 7/1/25–12/31/25

(G34) Air Force Office of Scientific Research, FA9550-22-1-0059, *Contraction Theory for Network Systems: Stability, Control and Learning*, UCSB, F. Bullo (PI), total amount $394K, 12/15/21-12/14/25.

Current Projects

(G35) Air Force Office of Scientific Research, FA9550-21-1-0203, *Resource Allocation in Complex Adversarial Environments*, UCSB, J. Marden (PI) and F. Bullo (Co-PI, $375K), total amount $750K, 5/1/21-5/14/2026

(G36) Army Research Office, W911NF-22-1-0233, *Cognitive Models and Strategies for High-Performance Human-AI Teams*, F. Bullo (PI), $900K, 9/1/22–8/31/26

(G37) Office of Naval Research, MURI Program, N00014-22-1-2813, *HUDDLE: Human Autonomy Teaming in Uncertain and Dynamic Environments*, F. Bullo (Co-PI, $699K), 9/1/22–8/31/27

(G38) Army Research Office, MURI Program, W911NF-24-1-0228, *NEURAL-SYNC: From Synchronized Oscillations to Neural Computing, Communication, and Adaptation*, Consortium of UCSB, UCSD, UCR, University of Pennsylvania, MIT, Northwestern University and University of Virginia. F. Bullo (PI), (Co-PI, $1664K), total amount $9M, 8/14/2024–8/13/2029.