**Joint Statement on Contact Tracing: Date 19th April 2020**

The undersigned represent scientists and researchers from across the globe. The current COVID-19 crisis is unprecedented and we need innovative ways of coming out of the current lockdowns. However, we are concerned that some “solutions” to the crisis may, via mission creep, result in systems which would allow unprecedented surveillance of society at large.

Contact tracing is a well-understood tool to tackle epidemics, and has traditionally been done manually. However, manual contact tracing is time-consuming and is limited to people who can be identified.

In some situations, so-called “contact tracing Apps” on peoples’ smartphones may improve the effectiveness of the manual contact tracing technique. These Apps would allow the persons with whom an infected person had physical interaction to be notified, thus enabling them to go into quarantine. The Apps would work by using Bluetooth or geolocation data present in smartphones. Though the effectiveness of contact tracing Apps is controversial, we need to ensure that those implemented preserve the privacy of their users, thus safeguarding against many other issues, noting that such Apps can otherwise be repurposed to enable unwarranted discrimination and surveillance.

Research has demonstrated that solutions based on sharing geolocation (i.e., GPS) to discover contacts lack sufficient accuracy and also carry privacy risks because the GPS data is sent to a centralized location. For this reason, Bluetooth-based solutions for automated contact tracing are strongly preferred when available.

Some of the Bluetooth-based proposals respect the individual's right to privacy, whilst others would enable (via mission creep) a form of government or private sector surveillance that would catastrophically hamper trust in and acceptance of such an application by society at large. It is crucial that citizens trust the applications in order to produce sufficient uptake to make a difference in tackling the crisis. It is vital that, in coming out of the current crisis, we do not create a tool that enables large scale data collection on the population, either now or at a later time. Thus, solutions which allow reconstructing invasive information about the population should be rejected without further discussion. Such information can include the “social graph” of who someone has physically met over a period of time.

With access to the social graph, a bad actor (state, private sector, or hacker) could spy on citizens’ real-world activities. Some countries are seeking to build systems which could enable them to access and process this social graph. On the other hand, highly decentralized systems have no distinct entity that can learn anything about the social graph. In such systems, matching between users who have the disease and those who do not is performed on the non-infected users’ phones as anonymously as possible, whilst information about non-infected users is not revealed at all.

To aid the development of contact tracing without a centrally controlled database that holds private information on individuals, Google and Apple are developing infrastructure to enable the required Bluetooth operations in a privacy protective manner. Teams building the privacy

protective schemes fully support this effort as it simplifies—and thus speeds up—the ability to develop such Apps. We applaud this initiative and caution against collecting private information on users. Some who seek to build centralized systems are pressuring Google and Apple to open up their systems to enable them to capture more data.

It is worth noting that the European Parliament on April 17th gave their support to the decentralized approach, pointing out by overwhelming majority "that [...] the generated data are not to be stored in centralised databases, which are prone to potential risk of abuse and loss of trust and may endanger uptake throughout the Union" and demanding "that all storage of data be decentralised".

There are a number of proposals for contact tracing methods which respect users' privacy, many of which are being actively investigated for deployment by different countries. We urge all countries to rely only on systems that are subject to public scrutiny and that are privacy preserving **by design** (instead of there being an expectation that they will be managed by a trustworthy party), as a means to ensure that the citizen's data protection rights are upheld

The following principles should be at least adopted going forward:

- Contact tracing Apps must only be used to support public health measures for the containment of COVID-19. The system must not be capable of collecting, processing, or transmitting any more data than what is necessary to achieve this purpose.
- Any considered solution must be fully transparent. The protocols and their implementations, including any sub-components provided by companies, must be available for public analysis. The processed data and if, how, where, and for how long they are stored must be documented unambiguously. Such data collected should be minimal for the given purpose.
- When multiple possible options to implement a certain component or functionality of the app exist, then the most privacy-preserving option must be chosen. Deviations from this principle are only permissible if this is necessary to achieve the purpose of the app more effectively, and must be clearly justified with sunset provisions.
- The use of contact tracing Apps and the systems that support them must be voluntary, used with the explicit consent of the user and the systems must be designed to be able to be switched off, and all data deleted, when the current crisis is over.

**Signed:**

**Australia**

| | |
|---|---|
| Prof. Dali Kaafar | Macquarie University |
| Prof. Vanessa Teague | Thinking Cybersecurity and Australian National University |
| Dr. Yuval Yarom | The University of Adelaide and Data61 |

**Austria**

| | |
|---|---|
| Prof. Daniel Gruss | Graz University of Technology |
| Prof. Stefan Mangard | Graz University of Technology |
| Prof. Elisabeth Oswald | University of Klagenfurt |

| | | |
|---|---|---|
| Prof. Christian Rechberger | Graz University of Technology | |

**Belgium**

| | | |
|---|---|---|
| Prof. Claudia Diaz | KU Leuven | |
| Prof. Mireille Hildebrandt | VU Brussels | |
| Prof. Wouter Joosen | KU Leuven | |
| Prof. Nele Mentens | KU Leuven | |
| Prof. Bart De Moor | KU Leuven | Fellow IEEE and SIAM |
| Prof. Yves Moreau | KU Leuven | Fellow ISCB |
| Prof. Olivier Pereira | UC Louvain | |
| Prof. Frank Piessens | KU Leuven | |
| Prof. Bart Preneel | KU Leuven | Fellow IACR |
| Prof. Jean-Jacques Quisquater | UCLouvain | Fellow IACR, Member of Belgium Royal Academy |
| Prof. Nigel Smart | KU Leuven | Fellow IACR |
| Prof. François-Xavier Standaert | UC Louvain | |
| Prof. Joos Vandewalle | KU Leuven | Fellow IEEE, IET, Eurasip, Member Royal Academy of Belgium and Academia Europaea |
| Prof. Ingrid Verbauwhede | KU Leuven | Fellow IEEE and Royal Academy of Belgium |
| Prof. Frederik Vercauteren | KU Leuven | |
| Dr. Mathias Vermeulen | VU Brussels | |

**Brazil**

| | | |
|---|---|---|
| Prof. Mário S. Alvim | Universidade Federal de Minas Gerais | |

**Canada**

| | | |
|---|---|---|
| Prof. Vijay Ganesh | University of Waterloo | |
| Prof. Ian Goldberg | University of Waterloo | |
| Prof. Sergey Gorbunov | University of Waterloo | |
| Prof. Xi He | University of Waterloo. | |
| Prof. Florian Kerschbaum | University of Waterloo | |
| Prof. Marc-Olivier Killijian | Université du Québec à Montréal | |
| Prof. Ali José Mashtizadeh | University of Waterloo | |
| Prof. Alfred Menezes | University of Waterloo | |
| Prof. Bessma Momani | University of Waterloo | |
| Prof. Michele Mosca | University of Waterloo | |
| Prof. Paul van Oorschot | Carleton University | Fellow ACM, IEEE and Royal Soc. Canada |
| Prof. Douglas Stebila | University of Waterloo | |
| Prof. Charles Taylor | McGill University | |

**Denmark**

| | | |
|---|---|---|
| Prof. Ivan Damgård | Aarhus University | Fellow IACR |
| Prof. Claudio Orlandi | Aarhus University | |

**Estonia**

| | | |
|---|---|---|
| Dr. Dan Bogdanov | Cybernetica | |

**Finland**

| | | |
|---|---|---|
| Prof. Chris Brzuska | Aalto University | |

**France**

| | | |
|---|---|---|
| Prof. Davide Balzarotti | EURECOM | |
| Prof. Karim Belabas | University of Bordeaux | |
| Dr. Olivier Blazy | University of Limoges | |
| Dr. Jean-François Couchot | University of Franche-Comté | |
| Prof. Aurélien Francillon | EURECOM | |
| Prof. Nadia El Mrabet | HDR Mines Saint-Etienne | |
| Dr. Rémi Géraud-Stewart | CentraleSupélec | |

| | | |
|---|---|---|
| Prof. Jean-Gabriel Ganascia | Sorbonne University | Fellow EURAI |
| Prof. Louis Goubin | University of Versailles St-Quentin-en-Yvelines | |
| Prof. Stefan Haar | INRIA (Mexico Team) | |
| Prof. David Kohel | Aix-Marseille University | |
| Dr. Pascal Lafourcade | University Clermont Auvergne | |
| Dr. Benoît Libert | ENS Lyon and CNRS | |
| Prof. Francois Morain | LIX, Ecole Polytechnique | |
| Prof. David Naccache | ENS Paris | |
| Prof. Melek Önen | EURECOM | |
| Dr. Pascal Paillier | Zama | |
| Prof. Benjamin Nguyen | INSA Centre Val de Loire | |
| Prof. Michaël Quisquater | University of Versailles | |
| Prof. Damien Stehlé | ENS Lyon | |
| Prof. Jacques Stern | ENS Paris | Fellow IACR |
| Prof. Massimiliano Todisco | EURECOM | |

**Germany**

| | | |
|---|---|---|
| Prof. Michael Backes | CISPA Helmholtz Center for Information Security | Fellow IEEE |
| Prof. Eric Bodden | Heinz Nixdorf Institute at Paderborn University & Fraunhofer IEM | |
| Prof. Georg Borges | Saarland University | |
| Dr. Sven Bugiel | CISPA Helmholtz Center for Information Security | |
| Prof. Stefan Brunthaler | Universität der Bundeswehr München | |
| Prof. Cas Cremers | CISPA Helmholtz Center for Information Security | |
| Dr. Jean Paul Degabriele | TU Darmstadt | |
| Dr. Alexander Dix | European Academy for Freedom of Information and Data Protection | |
| Prof. Christian Djeffal | TU München | |
| Prof. Hannes Federrath | University of Hamburg | President of German Computer Society |
| Prof. Bernd Finkbeiner | CISPA Helmholtz Center for Information Security | |
| Dr. Michael Friedewald | Fraunhofer ISI | |
| Prof. Mario Fritz | CISPA Helmholtz Center for Information Security | |
| Prof. Sascha Fahl | Leibniz University Hannover | |
| Prof. Nils Fleischhacker | Ruhr-Universität Bochum | |
| Prof. Dominik Herrmann | University of Bamberg | |
| Prof. Jeanette Hofmann | Wissenschaftszentrum Berlin für Sozialforschung | |
| Prof. Thorsten Holz | Ruhr-Universität Bochum | |
| Prof. Albert Ingold | Johannes Gutenberg Universität Mainz | |
| Dr. Swen Jacobs | CISPA Helmholtz Center for Information Security | |
| Prof. Tibor Jager | University of Wuppertal | |
| Dr. Ghassan Karame | NEC Laboratories Europe | |
| Dr. Christian Katzenbach | Humboldt Institute for Internet and Society, Berlin | |
| Prof. Eike Kiltz | Ruhr-Universität Bochum | |
| Dr. Dennis-Kenji Kipker | European Academy for Freedom of Information and Data Protection | |
| Prof. Teresa Koloma Beck | Universität der Bundeswehr München | |
| Dr. Katharina Krombholz | CISPA Helmholtz Center for Information Security | |
| Prof. Jörn Lamla | Universität Kassel | |
| Prof. Gregor Leander | Ruhr-Universität Bochum | |
| Prof. Anja Lehmann | Hasso-Plattner-Institute and University of Potsdam | |
| Ms. Ninja Marnau | CISPA Helmholtz Center for Information Security | |
| Prof. Mira Mezini | TU Darmstadt | Member Nat. Acad. of Engineering Sciences |
| Prof. Patrizia Nanz | University of Potsdam | |
| Prof. Paul Nolte | Freie Universität Berlin | |
| Prof. Christof Paar | Max Planck Inst. CyberSec. and Privacy | Fellow IACR and IEEE |
| Dr. Sebastian Pape | Goethe University Frankfurt | |
| Dr. Giancarlo Pellegrino | CISPA Helmholtz Center for Information Security | |
| Prof. Hartmut Pohl | softScheck GmbH | |
| Dr. Tina Pollmann | TU München | |
| Prof. Jörn Müller-Quade | KIT Karlsruhe | |
| Prof. Kai Rannenberg | Goethe University Frankfurt | Vice President IFIP |

| | | |
|---|---|---|
| Prof. Steffen Reith | RheinMain University of Applied Sciences | |
| Prof. Elisa Resconi | TU München | |
| Prof. Alexander Roßnagel | University of Kassel | |
| Prof. M Angela Sasse | Ruhr Universität Bochum | |
| Prof. Ina Schiering | Ostfalia University of Applied Sciences | |
| Prof. Sebastian Schinzel | Münster University of Applied Sciences | |
| Prof. Stefan Schönert | TU München | |
| Prof. Jörg Schwenk | Ruhr University Bochum | |
| Prof. Juraj Somorovsky | Paderborn University | |
| Prof. Christoph Sorge | Universität des Saarlandes | |
| Dr. Ben Stock | CISPA Helmholtz Center for Information Security | |
| Prof. Thorsten Strufe | KIT Karlsruhe and CeTI TU Dresden | |
| Dr. Nils Ole Tippenhauer | CISPA Helmholtz Center for Information Security | |
| Prof. Jilles Vreeken | CISPA Helmholtz Center for Information Security | |
| Prof. Andreas Zeller | CISPA Helmholtz Center for Information Security | Fellow ACM |

**India**

| | | |
|---|---|---|
| Prof. Subhamoy Maitra | Indian Statistical Institute | |
| Dr. Mridul Nandi | Indian Statistical Institute | |
| Prof. Manoj Prabhakaran | IIT Bombay | |
| Dr. Somitra Kr. Sanadhya | IIT Ropar | |
| Prof. Sandeep Kumar Shukla | IIT Kanpur | Fellow IEEE |

**Italy**

| | |
|---|---|
| Prof. Rainer Bauböck | European University Institute, Florence |
| Prof. Carlo Blundo | Università di Salerno |
| Prof. Dario Catalano | Università di Catania |
| Prof. Ciro Cattuto | University of Turin |
| Prof. Giovanni Comandé | Scuola Superiore Sant'Anna, Pisa |
| Prof. Mauro Conti | Università di Padova |
| Prof. Giuseppe Persiano | Università di Salerno |
| Prof. Daniele Venturi | Sapienza University of Rome |
| Prof. Ivan Visconti | University of Salerno |

**Israel**

| | |
|---|---|
| Prof. Katya Assaf | Hebrew University |
| Prof. Yehuda Lindell | Bar-Ilan University |
| Prof. Benny Pinkas | Bar-Ilan University |

**Japan**

| | |
|---|---|
| Prof. Tetsu Iwata | Nagoya University |
| Prof. Kazuo Sakiyama | UEC Tokyo |

**Luxembourg**

| | |
|---|---|
| Prof. Peter Y A Ryan | University of Luxembourg |

**Portugal**

| | |
|---|---|
| Dr. Manuel Barbosa | University of Porto (FCUP) and INESC TEC |

**Mexico**

| | |
|---|---|
| Dr. Cuauhtemoc Mancillas-López | CINVESTAV-IPN |
| Dr. Brisbane Ovilla-Martínezm | CINVESTAV-IPN |
| Dr. Francisco Rodríguez-Henríquez | CINVESTAV-IPN |

**The Netherlands**

| | |
|---|---|
| Prof. Lejla Batina | Radboud University |
| Prof. Peter Boncz | CWI Amsterdam and VU University Amsterdam |

| | | |
|---|---|---|
| Prof. Jos Baeten | CWI Amsterdam and University of Amsterdam | |
| Prof. Ronald Cramer | CWI Amsterdam and Leiden University | Fellow IACR |
| Prof. Joan Daemen | Radboud University | |
| Prof. Arie van Deursen | TU Delft | |
| Prof. Aaron Ding | TU Delft | |
| Dr. Leo Ducas | CWI Amsterdam | |
| Prof. Michel van Eeten | TU Delft | |
| Prof. Serge Fehr | CWI Amsterdam and Leiden University | |
| Prof. Tobias Fiebig | TU Delft | |
| Prof. Natali Helberger | University of Amsterdam | |
| Prof. Lisa Herzog | University of Groningen | |
| Prof. Marijn Janssen | TU Delft | |
| Prof. Tanja Lange | Eindhoven University of Technology | |
| Prof. Arno R. Lodder | Vrije Universiteit Amsterdam | |
| Prof. Veelasha Moonsamy | Radboud University | |
| Prof. Stefanie Roos | TU Delft | |
| Prof. Peter Schwabe | Radboud University | |
| Dr. Benne de Weger | Eindhoven University of Technology | |
| Dr. Philip Zimmermann | TU Delft | |

**New Zealand**

| | | |
|---|---|---|
| Prof. Steven Galbraith | University of Auckland | |

**Norway**

| | | |
|---|---|---|
| Prof. Kristian Gjøsteen | NTNU | |

**Slovenia**

| | | |
|---|---|---|
| Prof. Marko Holbl | University of Maribor | |

**Spain**

| | | |
|---|---|---|
| Prof. Manuel Carro | IMDEA Software Institute and Technical University of Madrid | |
| Prof. Ignacio Cascudo | IMDEA Software Institute | |
| Gemma Galdon Clavell | Eticas Foundation | |
| Prof. Dario Fiore | IMDEA Software Institute | |
| Prof. Ramon Lopez de Mantaras | Artificial Intelligence Research Institute | Fellow of EurAI |
| Prof. Juan Tapiador | UC3M | |
| Prof. Narseo Vallina-Rodriguez | IMDEA Networks Institute | |
| Prof. María Isabel González Vasco | Universidad Rey Juan Carlos | |

**Sweden**

| | | |
|---|---|---|
| Prof. Rose-Mharie Åhlfeldt | University of Skövde | |
| Dr. Matthias Beckerle | Karlstad University | |
| Prof. Simone Fischer-Hübner | Karlstad University | |
| Dr. Leonardo Martucci | Karlstad University | |
| Mr. Linus Nordberg | DFRI | |
| Dr. Tobias Pulls | Karlstad University | |

**Switzerland**

| | | |
|---|---|---|
| Prof. David Basin | ETH Zurich | Fellow ACM |
| Dr. Peter Berlich | ZHAW | |
| Dr. Jan Beutel | ETH Zurich | |
| Prof. Edouard Bugnion | EPFL | Fellow ACM |
| Prof. Christian Cachin | University of Bern | Fellow ACM and IEEE |
| Prof. Srdjan Čapkun | ETH Zurich | Fellow ACM |
| Prof. Bryan Ford | EPFL | |
| Prof. Dennis Hofheinz | ETH Zurich | |
| Prof. Jean-Pierre Hubaux | EPFL | Fellow ACM and IEEE |
| Prof. James Larus | EPFL | Fellow ACM |

| | | |
|---|---|---|
| Prof. Ueli Maurer | ETH Zurich | Fellow ACM, IACR and IEEE |
| Prof. Adrian Perrig | ETH Zurich | Fellow ACM |
| Prof. Kenny Paterson | ETH Zurich | Fellow IACR |
| Prof. Mathias Payer | EPFL | |
| Prof. Kaveh Razavi | ETH Zurich | |
| Prof. Marcel Salathé | EPFL | |
| Prof. Carmela Troncoso | EPFL | |

**United Arab Emirates**

| | | |
|---|---|---|
| Prof. Christina Pöpper | New York University, Abu Dhabi. | |

**United Kingdom**

| | | |
|---|---|---|
| Prof. Martin Albrecht | Royal Holloway, University of London | |
| Dr. Reuben Binns | University of Oxford | |
| Prof. Lorenzo Cavallaro | King's College London | |
| Prof. Liqun Chen | University of Surrey | |
| Prof. Carlos Cid | Royal Holloway, University of London | |
| Dr. Jennifer Cobbe | University of Cambridge | |
| Prof. Jon Crowcroft | University of Cambridge | FRS, FREng Fellow ACM and IEEE |
| Prof. George Danezis | UCL | |
| Prof. Lilian Edwards | Newcastle University | |
| Prof. Flavio Garcia | University of Birmingham | |
| Dr. Robert Granger | University of Surrey | |
| Dr. Jassim Happa | Royal Holloway, University of London. | |
| Dr. Rikke Bjerg Jensen | Royal Holloway, University of London | |
| Dr. Philipp Jovanovic | UCL | |
| Prof. Aggelos Kiayias | University of Edinburgh | |
| Prof. Christopher Marsden | University of Sussex | |
| Prof. Keith Martin | Royal Holloway, University of London | |
| Prof. Ivan Martinovic | University of Oxford | |
| Dr. Tim Muller | University of Nottingham | |
| Dr. Dan Page | University of Bristol | |
| Dr. Elizabeth Quaglia | Royal Holloway, University of London | |
| Prof. Mark D. Ryan | University of Birmingham | |
| Prof. Burkhard Schafer | University of Edinburgh | |
| Prof. Steve Schneider | University of Surrey | Fellow IET |
| Dr. Jat Singh | University of Cambridge | |
| Prof. Max Van Kleek | University of Oxford | |
| Dr. Michael Veale | UCL | |
| Prof. Alan Woodward | University of Surrey | Fellow BCS and InstP |
| Dr. Vassiles Zikas | University of Edinburgh | |

**United States of America**

| | | |
|---|---|---|
| Prof. Alessandro Acquisti | Carnegie Mellon University | |
| Dr. Johanna Amann | ICSI | |
| Prof. Adam Bates | Uni. of Illinois at Urbana-Champaign | |
| Prof. Lujo Bauer | Carnegie Mellon University | |
| Prof. Mihir Bellare | UC San Diego | Fellow ACM and IACR |
| Prof. Daniel J. Bernstein | University of Illinois at Chicago | |
| Prof. Matt Blaze | Georgetown University | |
| Prof. Vincent Bindschaedler | University of Florida | |
| Prof. Dan Boneh | Stanford University | Fellow ACM, IACR, US Nat. Acad. of Eng. |
| Prof. Kevin Butler | University of Florida | |
| Dr. Jon Callas | ACLU | |
| Prof. L. Jean Camp | Indiana University | Fellow AAAS, IEEE |
| Prof. Ran Canetti | Boston University | Fellow IACR |
| Deirdre Connolly | Zcash Foundation | |
| Prof. Nicolas Christin | Carnegie Mellon Uni. | |

| | | |
|---|---|---|
| Prof. Lorrie Cranor | Carnegie Mellon Uni. | Fellow ACM and IEEE |
| Prof. Anupam Das | North Carolina State Uni. | |
| Prof. Srinivas Devadas | MIT | Fellow ACM and IEEE |
| Prof. Sven Dietrich | City University of New York | |
| Prof. Marten van Dijk | University of Connecticut and CWI | |
| Prof. Jintai Ding | University of Cincinnati | |
| Roger Dingledine | The Tor Project | |
| Dr. Roel Dobbe | AI Now Institute (New York) | |
| Prof. Manuel Egele | Boston University | |
| Prof. William Enck | North Carolina State Uni. | |
| Prof. Shyam Gollakota | University of Washington | |
| Prof. Matthew D. Green | Johns Hopkins University | |
| Prof. Rachel Greenstadt | New York University | |
| Prof. Giulia Fanti | Carnegie Mellon University | |
| Prof. Dean Foster | Uni. of Pennsylvania | Fellow IMS and Game Theory Society |
| Prof. Michael Franz | UC Irvine | Fellow AAAS, ACM, IEEE, and IFIP |
| Prof. Britta Hale | Naval Postgraduate School | |
| Dr. Mike Hamburg | Rambus | |
| Dr. Helena Handschuh | Rambus Fellow | |
| Prof. Trent Jaeger | Pennsylvania State University | |
| Prof. Somesh Jha | Uni. of Wisconsin, Madison | |
| Prof. Sham Kakade | University of Washington | |
| Prof. Aniket Kate | Purdue University | |
| Prof. Jonathan Katz | George Mason Uni. | Fellow IACR |
| Dr. Hugo Krawczyk | Algorand Foundation | Fellow IACR |
| Dr. Kristin E. Lauter | Microsoft Research | Fellow AMS, SIAM and AWM |
| Prof. Susan Landau | Tufts University | Fellow ACM and AAAS |
| Prof. Tadayoshi Kohno | University of Washington | |
| Dr. John Langford | Microsoft Research | President of ICML |
| Dr. Timothy Libert | Carnegie Mellon University | |
| Prof. Anna Lysyanskaya | Brown University | |
| Prof. David Mazières | Stanford University | |
| Prof. Michelle Mazurek | University of Maryland, College Park | |
| Prof. Patrick McDaniel | Pennsylvania State Uni. | |
| Prof. Prateek Mittal | Princeton University | |
| Prof. Rafail Ostrovsky | UCLA | Fellow IACR, IEEE, Member Academia Europea |
| Prof. Aanjhan Ranganathan | Northeastern University | |
| Prof. Bradley Reaves | North Carolina State Uni. | |
| Prof. Franziska Roesner | University of Washington | |
| Prof. Phil Rogaway | UC Davis | Fellow IACR |
| Mr. Gregory Rose | Deckard Technologies, Inc. | |
| Prof. Norman Sadeh | Carnegie Mellon University | |
| Prof. Alessandra Scafuro | North Carolina State Uni. | |
| Prof. Patrick Schaumont | Worcester Polytechnic Institute | |
| Prof. Micah Sherr | Georgetown University | |
| Prof. Thomas Shrimpton | University of Florida | |
| Prof. Dawn Song | Fellow ACM, IEEE | |
| Prof. Philip B. Stark | UC Berkeley | Fellow ASA, Inst. Phys. and Royal Astronomy Soc. |
| Prof. Stefano Tessaro | University of Washington | |
| Prof. Patrick Traynor | University of Florida | |
| Prof. Lyle Ungar | University of Pennsylvania | |
| Henry de Valence | Zcash Foundation | |
| Prof. Mayank Varia | Boston University | |
| Prof. XiaoFeng Wang | Indiana University | Fellow IEEE |
| Mr John Wilkinson | MIT | |
| Prof. Byron Williams | University of Florida | |
| Prof. Laurie Williams | N. Carolina State Uni. | Fellow IEEE |
| Prof. Matthew Wright | Rochester Institute of Technology | |

Prof. Dongyan Xu Purdue University
Prof. Xiangyu Zhang Purdue University

## Appendix:

Privacy-preserving decentralized methods of the type referred to in this document include:

**DP-3T**: https://github.com/DP-3T
**TCN Coalition**: https://tcn-coalition.org/
**PACT (MIT)**: https://pact.mit.edu/
**PACT (UW)**: https://covidsafe.cs.washington.edu/

All these teams are committed to working together to make their systems interoperate. They aim to provide different decentralized privacy preserving methods which can be adapted by countries depending on their local situation. By working together they can ensure that using contact tracing in the effort to defeat COVID-19 can be done in a way that protects privacy.

**Any media contacts should be sent to one of**

| | |
|---|---|
| **US Press:** | **James Larus:** |
| **EU Press:** | **Kenny Paterson:** |
| **UK Press:** | **Michael Veale:** |
| **RoW:** | **Nigel Smart:** |
| **Dutch/French** | **Bart Preneel:** |
| **German:** | **Cas Cremers:** |
| **Spanish:** | **Carmela Troncoso:** |
| **Italian:** | **Dario Fiore:** |