Cover Letter

Subject: Application for NBER Innovation Research Boot Camp 2026

Dear Members of the Selection Committee,

I am writing to apply for the NBER Innovation Research Boot Camp 2026. I hold a PhD in Economics from the Indian Institute of Technology (IIT) Indore, with specialization in the economics of innovation, intellectual property, and international technology diffusion. I am currently a Postdoctoral Fellow at the Desai Sethi School of Entrepreneurship, IIT Bombay, where my research focuses on academic patenting, technology commercialization, and innovation policy in emerging economies.

My doctoral research examined cross-border diffusion of technology at the country level. It focuses on determinants of international patenting and its impact on the host countries. I also led one project supported by the Department of Science and Technology, government of India, focusing on innovation strategies and patenting behaviour of foreign firms in India, with particular emphasis on how firms and institutions use intellectual property to appropriate returns from innovation.

Building on this foundation, my current work uses academic patent data to study the determinants and mechanisms of successful technology commercialization, including signalling through patent claims, technological breadth, collaboration structures, and institutional design of university technology transfer systems.

The Innovation Research Boot Camp is uniquely aligned with my research agenda. The opportunity to engage with frontier work in innovation economics, receive exposure to leading empirical approaches, and participate in the NBER Summer Institute Innovation Policy meetings would be invaluable at this stage of my career. I am particularly keen to deepen my understanding of how innovation systems operate across institutional contexts and how policy design shapes innovation outcomes.

I believe the Boot Camp would significantly strengthen my ability to contribute to the global research community working on innovation, productivity, and policy-relevant questions, and I would value the opportunity to learn from and interact with scholars, faculty, and peers participating in the program. My recommender for this application is **Prof. Ruchi Sharma** (ruchi@iiti.ac.in), Professor of Economics, Indian Institute of Technology Indore, India. My CV and an essay on my research are attached.

Thank you for considering my application.

Sincerely,
Aparna Sharma
Postdoctoral Fellow
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Aparna Sharma, PhD | Mumbai, India
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PROFILE

Economist with 13+ years of academic and policy research experience at the intersection of innovation economics, intellectual property, entrepreneurship, and international trade. Proven ability to independently conceptualise, lead, and deliver large research and policy projects, including government-funded studies and international fellowships. Research focuses on patent strategies, technology diffusion, global value chains, and industrial upgrading, with a strong Asia orientation.

CURRENT POSITIONS

Postdoctoral Fellow | Desai Sethi School of Entrepreneurship (DSSE), IIT Bombay | *Oct 2024 – Present*
Lead research on patent commercialisation and innovation ecosystems at IIT Bombay

- Occasional classroom teaching of IP and entrepreneurship-related courses
- Develop entrepreneurship and technology commercialisation case studies
- Deliver IP awareness lectures; advise students and faculty on patent strategy
- Contribute to institutional discussions on IP policy and academic entrepreneurship

Associated Researcher (Honorary) | Stiftungsfonds Deutsche Bank Chair of Innovation Management & Entrepreneurship, HHL Leipzig Graduate School of Management, Germany | *Sep 2024 – Present*

- Research on mechanisms translating international patenting into economic value

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PAST ACADEMIC & RESEARCH EXPERIENCE

India Technology Policy Fellow | Pacific Forum, USA | *Jul 2024 – Sep 2025*

- Independently designed and executed policy research on India's semiconductor supply chain security
- Analysed patent, trade, and industrial policy data to produce policy briefs and articles
- Engaged international audiences on Indo-Pacific technology and innovation strategy

Project Lead & Senior Research Associate | India Development Foundation (IDF), Gurugram | *Jun 2019 – Nov 2022*

- Co-Principal Investigator on DST-funded project *"R&D and Patenting by Foreign Firms in India."*
- Led project from proposal design to final submission, including data construction, analysis, reporting, and compliance with DST
- Coordinated with IIT Indore, DST officials, and external experts
- Mentored research interns and junior staff

Visiting Scholar | National Cheng Kung University, Taiwan | *Mar 2018 – Jun 2018*

- Research on knowledge spillovers and patent citation behaviour in ICT industries

Senior Research Associate / Research Associate / Research Assistant | CUTS International, Jaipur | *2013 – 2019*

- Conducted policy research and extensive fieldwork on trade facilitation, regional connectivity, and innovation in South & Southeast Asia
- Led survey design, stakeholder consultations, data analysis, and policy report writing
- Worked with international agencies including the World Bank, DFAT (Australia), Asia Foundation, US State Department

Research Assistant | IIM Lucknow & IIT Indore | *2011 – 2013*

- Assisted faculty on projects related to productivity, innovation, FDI, and patent policy

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EDUCATION

PhD in Economics | Indian Institute of Technology Indore | *2016 – 2023*
Thesis: *Non-Resident Patenting: Its Determinants and Impact on the Host Country*
MA Economics | University of Rajasthan |2011
BA Economics (Hons.) | University of Rajasthan | 2009

SELECTED PUBLICATIONS (Academic & Policy)

Peer-Reviewed Journals

- Sharma, A., Sharma, R., & Panda, S. (2022). The role of technological capabilities and the gap in the cross-country patenting: an empirical investigation. *International Economics and Economic Policy, 19,* 1-27. ABDC – B; Q2; DOI - https://doi.org/10.1007/s10368-021-00506-5
- Sharma, A., & Sharma, R. (2022). Patent citing patterns of foreign firms: an analysis of the Indian IT services industry. *Asian Journal of Technology Innovation, 31(1),* 156-182. ABDC – B, Q2 | DOI - https://doi.org/10.1080/19761597.2022.2026234
- Sharma, A., Danish, M. S., & Sharma, R. (2021). Knowledge Spillovers in the ICT Industry of India: Evidence from the Firm's Patent Citation Behavior. *Journal of Scientometric Research, 10(2),* 166-174. Scopus|DOI - 10.5530/jscires.10.2.31

Under Review – Received (revise and resubmit 1)

- Exploring Linkages among Innovation, Productivity and Non-Resident Patenting: A CDM Approach (co-authored with Danish, M. S., & Sharma, R). Economics of Innovation and New Technology (Taylor and Francis) ABDC – A; Q1.
- Identifying Mechanisms for Translating the Economic Benefits of International Patenting into National Wealth (co-authored with Nadezhda I. Mullina & Kelvin W. Willoughby, Stiftungsfonds Deutsche Bank Chair of Innovation Management and Entrepreneurship, HHL Leipzig Graduate School of Management, Leipzig, Germany) submitted to Economics of Innovation and New Technology (Taylor and Francis) ABDC – A; Q1.

Policy & Public Writing

- Policy Paper on IP and Indian semiconductor industry, Pacific Forum (2025)
- Op-eds in *The Hindu BusinessLine* on semiconductor and IP policy

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PhD COURSES, CERTIFICATIONS, AND TRAINING

PhD Course Work: Data Analysis & Technical Writing; Econometrics; Economics of Innovation; Sustainability Studies; Contemporary Indian Thoughts; Nations & Nationalism; PhD Seminar Course.

Certifications & Training

- FICCI IP Education Centre: Course on IP protection and commercialization - Ongoing
- FICCI IP Education Centre: Certificate Course on Intellectual Property Rights & Competition Law - Ongoing
- WIPO Certification: DL-101 General Course on Intellectual Property, Nov 1, 2025 – Dec 14, 2025
- WIPO DL-301 Patents (Self-study) | Oct 1, 2025 – Dec 31, 2025
- WIPO Certification: DL-170 Specialized Course on the Essentials of Patents | Ongoing
- Global Initiatives of Academic Networks (GIAN) course, MHRD, Govt. of India on 'Economics of Science, Technology and Innovation: Empirical Approaches and Randomized Control Trials (RCTs)', 10-14 January, 2018, IIT Indore | Expert – ***Prof. Ina Ganguli*** (UMass Amherst)
- First Asia - Pacific Colloquium on IP & Competition Law, 13-17 March 2017, National Law University, New Delhi
- Global Initiatives of Academic Networks (GIAN) course, MHRD, Govt. of India on 'Intellectual Property Rights and International Economic Development, 12-16 December 2016, IIT Indore | Expert- ***Prof. Walter G Park***, American University, Washington, DC

RESEARCH SKILLS & DATA EXPERTISE

- Patent databases: USPTO, Derwent; IPO-InPaSS; PatSeer, WIPO; PATSTAT, LENS
- Trade & firm data: UN Comtrade, OECD, CMIE Prowess, ITC TradeMap
- Methods: Econometrics, panel data analysis, innovation indicators
- Software: Stata (Advanced), Excel (Advanced), SPSS, R (Basic), Python (Basic)

AWARDS & FELLOWSHIPS

- India Technology Policy Fellowship – Pacific Forum, USA
- DST (Govt. of India) Project Grant (Co-PI)
- ICSSR Institutional Doctoral Fellowship
- Taiwan Education Experience Programme Scholarship

Essay on Current/Future Research

NBER Innovation Research Boot Camp 2026

My research lies at the intersection of innovation economics, intellectual property, and technology policy, with a focus on understanding how firms and institutions generate, appropriate, and commercialize knowledge. I am particularly interested in how patenting strategies, organizational structures, and institutional design shape innovation outcomes in both developed and emerging economies.

My existing research examined country-level patenting and firm-level innovation strategies using patent application data, analyzing how different modes of patenting—technology-creating, technology-seeking, and technology-exploiting—relate to productivity and international technology diffusion. This work highlighted the role of intellectual property not merely as a legal instrument, but as an economic signal that influences firm behavior, market structure, and cross-border knowledge flows.

In my current postdoctoral work at IIT Bombay, I study academic innovation and commercialization using a novel dataset of over 1,300+ patent applications filed by the institute between 2012 and 2024, combined with commercialization outcomes from the technology transfer office and patent-level characteristics. Using econometric models, I inferred mechanisms through which patents signal value to potential licensees, focusing on claim structure, patent family size, technological breadth, and collaborative ownership. This project contributes to ongoing debates on whether and how universities in emerging economies can translate research into marketable technologies.

Complementing my academic research, I have also been awarded an India Technology Policy (ITP) Fellowship 2024 by the Pacific Forum, USA, where I worked on intellectual property, innovation strategy, and policy issues in the semiconductor sector. This experience has strengthened my interest in connecting micro-level evidence on innovation and patenting with broader questions of policy design, competitiveness, and technological leadership.

Looking ahead, my research agenda aims to advance three interconnected themes. First, I seek to develop better empirical measures of innovation quality and complexity using patent text and structural features. Second, I plan to study how institutional arrangements, such as technology transfer offices, incubators, and public funding programs, affect commercialization efficiency. Third, I aim to contribute to policy discussions on innovation systems by comparing innovation and IP strategies across countries and institutional contexts.

The NBER Innovation Research Boot Camp offers an unparalleled opportunity to refine my research agenda, engage with leading scholars in the field, and situate my work within the broader frontier of innovation economics. Participation in the Boot Camp and the associated Summer Institute meetings would be instrumental in strengthening both the theoretical grounding and empirical rigor of my future research.

भारतीय प्रौद्योगिकी संस्थान इन्दौर
सिमरोल, खण्डवा रोड़, इन्दौर, भारत पिन - 453 552
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IIT Indore

To
Mr. Brett Marajian
NBER

Subject: Recommendation for Aparna Sharma | NBER Innovation Research Boot Camp 2026

Dear Mr. Brett Maranjian,

I am pleased to write in strong support of Aparna Sharma's application to the NBER Innovation Research Boot Camp 2026. I supervised Aparna's doctoral research in Economics at the Indian Institute of Technology Indore and have worked closely with her for over eight years in two stints.

Aparna's PhD research broadly focused on the economics of innovation and intellectual property, with particular emphasis on international patenting as a key driver of technology diffusion. Her dissertation, *"Non-Resident Patenting: Its Determinants and Impact on the Host Country,"* demonstrated strong command of empirical methods, careful data construction using WDI and WIPO patent databases, and the ability to connect country-level evidence to broader questions of innovation policy and economic outcomes. She is a disciplined and independent researcher with a clear grasp of the theoretical and institutional foundations of innovation economics.

Since completing her PhD, Aparna has continued to build a coherent and ambitious research agenda. Her current postdoctoral work on academic patenting and technology commercialization, based on detailed patent-level data and econometric analysis, reflects exactly the kind of research orientation that the Innovation Research Boot Camp aims to support. Aparna is intellectually curious, highly motivated, and engages constructively with feedback. She works comfortably across academic and policy-relevant research environments, as reflected in her India Technology Policy Fellowship and government-funded research experience, while maintaining strong scholarly rigor.

I am confident that Aparna would benefit greatly from the NBER Innovation Research Boot Camp and would also contribute meaningfully to discussions with faculty and peers. I recommend her to you without reservation.

Sincerely,

Ruchi Sharma

Prof. Ruchi Sharma, PhD
Professor of Economics, IPR Chair Professor
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