TARA BURKE

tburke13@umd.edu; 530.220.0831

EXPERIENCE AND SKILLS RELEVANT TO THIS FACULTY SPECIALIST POSITION ARE ON PAGES 1-2

Smart Cities and Connected Communities Experience

University of Maryland, College Park (UMD), School of Architecture, Planning & Preservation
Smart Cities Initiative (25%) and Research Development (75%) ~ 9/2018 to present

Manage the Smart Cities Initiative - lead by faculty in the National Center for Smart Growth and the School of Information Studies – this cross-campus, socio-technical initiative has research, curricular, and service goals. Duties include: (1) chairing the UMD Smart Cities Roundtable series (~140 members on the listserv) that includes academic, municipal, and industry participants and leading the Broadband Equity subcommittee work; (2) supporting proposal development for federal, state, and foundation research opportunities; and (3) managing/supporting the execution of funded research projects. I have served as a reviewer on three NSF ad-hoc panels and am a council member of the DC chapter of the Internet Society (ISOC-DC), a hub for education and research concerning the important issues confronting digital equity.

My role on three exemplary research projects is outlined below:

- **SCC-PG: Park WiFi as a BRIDGE to Community Resilience Project** - NSF Award 2125526 ($150K); PI Nirupam Roy (Computer Science); my role is as senior personnel supporting task execution, stakeholder management, and digital equity research questions. The project proposes a new model to Build Resilience through the Internet and Digital Greenspace Exposure (BRIDGE), leveraging off-the-shelf WiFi technology, novel algorithms, community assets, and local partnerships to lower the cost of greenspace WiFi and ensure long-term governance. BRIDGE adapts a sustainable WiFi infrastructure through direct donations of internet bandwidth from geographically proximate community donors (e.g., schools, churches). I managed the multidisciplinary proposal team build/write including external partner, Prince George's County Parks.

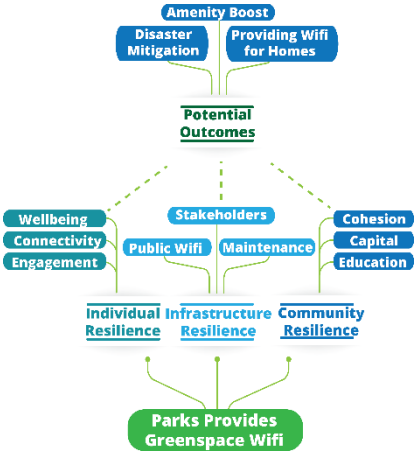
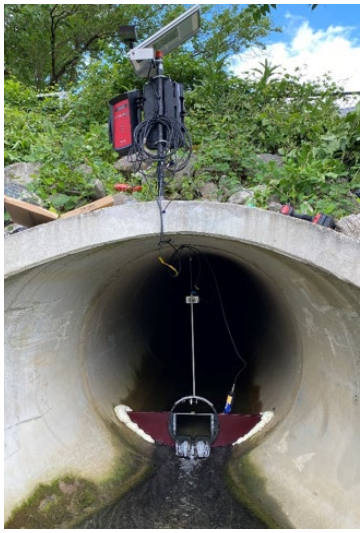


Figure 1 conceptual model

- **Internet-of-Things (IOT) Stormwater Project** - Funded by the UMD Sustainability Fund ($43K); led by PI Marccus Hendricks (Urban Studies & Planning) with 15 multidisciplinary partners in UMD Facilities and 4 schools/colleges. The goal of this project is to use an IoT framework to monitor and improve stormwater management. This project provides real-time and continuous data that can inform both short-term responses and longer-term restoration retrofits to treat stormwater surface runoff. Long term goals include improving climate resilience through science-based decision support. My role is as the project manager: equipment deployment and maintenance, data collection, and team management. I supported the initial team build and proposal development process. The project has been successfully executed on campus; phase II is under development and includes expansion into community.



Picture 1 campus outfall #3 with solar panel, sensor box, water quality and quantity sensors

- **SCC-PG: How Can Investments in Smart Cities Technologies Improve the Lives of Low-Income, Inner-City Residents** – NSF Award1737495 ($100K); Co-PI's Gerrit Knaap (Urban Studies & Planning) and Vanessa Frias-Martinez (iSchool). The team of technical and social scientists from 4 area universities sought to understand how investments in smart cities technology could improve the lives of residents in low-income neighborhoods. They worked with neighborhoods in West Baltimore, Maryland, to create an asset-and-community-based approach to develop a strategic plan for smart city investment that would meet the community's needs. My role on this completed project was to support execution of the focus groups and deliverables (three reports), manage the city stakeholder relationships with the Mayor's Office and the Baltimore City Information & Technology office, and to coordinate the very successful public information day (7/12/2018) that resulted in media coverage from the Baltimore Sun and Baltimore Business Journal; https://www.umdsmartgrowth.org/city/baltimore-smart-cities-project/.

Figure 2: community conversation captured graphic – artist Art Hondros

Research Development lead for the School of Architecture, Planning, and Preservation (75%). Provides foundational education on best practices in proposal development with an emphasis on early career faculty including workshops, editing, multidisciplinary team management, and external stakeholder engagement.
Projects developed: In the past 4 years, 97 proposals have been submitted ($55M) with 38 proposals funded ($10.4M awarded); 7 proposals ($11M) are pending decisions.

Analytical and Data Experience:

University of California, Davis, University Development Campaign Analyst ~ 8/2007 to 6/2013

Lead analyst for $1 billion fundraising campaign. Conceptualized, designed, and implemented analytical prospect development reports and tools to enhance expedited decision-making by university leadership.

- Built a suite of automated reports in collaboration with the relational database lead programmer that tracked multiple goals over time for 22 colleges/units, including prospecting cycle analyses.
- Built a modeling project from the relational database – campaign data warehouse subunit (approx. 5M records) - for seeding prospect identification and evaluating fundraiser effectiveness.

Field Research Experience:

Wildlife Biology Researcher ~1990-1993 and 1995-1997

Collaborated in biological data collection projects (typically in 3–6-month excursions) in remote and challenging field locations with mammalian and avian subjects. Duties included biometric data collection, banding of chicks and adult birds, blood sampling, and dissection.

- Flying Squirrel Minimum-Habitat Research Project ~ Vancouver, BC
- Population Census of Cassin's Auklet ~ Frederick Island, Haida Gwaii, BC
- Seabird Habitat Restoration Project ~ Bald Eagle Brodaficum Assay Survey ~ Haida Gwaii, BC
- Captive Golden Lion Tamarin Research Project ~ Smithsonian National Zoo, Washington, DC
- Ultimate Causation of Insect Drift ~ Rocky Mountain Biological Laboratory, Gothic, Colorado

EDUCATION AND TECHNICAL SKILLS

Education: University of Maryland, College Park ~ B.S. Zoology 1992

Technical Skills: Expert level experience with Excel: pivot table creation, formula use, and macro applications; Access – Querying and basic SQL code-reading facility, table structure and business rule design with relational database, mini-big data analysis of fundraising data (100K-1M records). ARCGIS mapping: Novice user/developer.

OTHER EMPLOYMENT DETAIL

Raven Consulting
Principal ~ 4/2017 to 8/2018

Independent, proposal development consultant specializing in early career faculty, large center development, and cross-disciplinary funding opportunities. Services include:

- Traditional proposal development and management services for proposals including timeline management, storyline development, collaborator liaisonship, and editing services (NSF, NIH, SBIR).
- Modularized, proposal development short programs best suited to early and mid-career faculty. Topics/exercises include competitive intelligence research methods, persuasive argument crafting for research impact, and specific aims development.
- Clients: Kaiser Permanente, Mid-Atlantic Research; UMD Behavioral and Social Sciences Dean's Office, SeeTrue Technology LLC, UMD National Center for Smart Growth.

University of Maryland, College Park (UMD), Division of Research
Director, Research Development Resources ~ 2/2015 to 3/2017

Led all centralized research development programs and services available to 4500+ faculty/researchers. Fostered interdisciplinary research opportunities via leadership and grassroots information sharing networks across 13 schools/colleges. Supervised 3 technical students (two graduate and one undergraduate).

Programs

Managed the limited submission and faculty incentive seed grant programs; ~50+ competitions annually.

- Counselled faculty on how to leverage internal support requests with external funding opportunities.
- Campus liaison to the Smithsonian Institution and the MPower Research initiative.
- Reengineered office workflow practices via an automation lens. Architected and directed the build of:
  - A pilot PostgreSQL database that mapped external and internal faculty funding success rates.
  - Web scraping programs as funding alert resources and benchmarking tools.

Faculty Support

- Educated faculty on internal support options including proposal development services and fund-finding database use. The weekly funding alert listserv grew from 54 to 560 within my tenure.
- Conducted 3-4 individual faculty consultations per week. Matched researchers to funders (e.g. NSF, DoD, NIH, MacArthur, Packard), and cross-campus, multidisciplinary research initiatives.
- Hosted 8-15 seminars, workshops, and brown bag information sessions per semester.

Campus Wide Projects

Served as the Division of Research staffer on two cross-campus initiatives:

- Big Data Research Faculty Working Group: The recommendation white paper was adopted by the provost to inform Maryland Senate Bill 1052 (signed in 2016) that provides $6M/year in state-line resources for data, virtual/augmented reality, cybersecurity, and biomedical device research at UMD.
- Research Networking System (faculty expertise database and external viewing portal) Task Force: Worked with the Division of Information Technology, Libraries, Faculty Affairs, and the Graduate School to determine best options (open source vs. industry solution).

University of Maryland, College Park, Department of Computer Science, Institute for Advanced Computer Studies, and Maryland Cyber Security Center
Assistant Director of Corporate Relations ~ 7/2013 to 11/2013
Director of Corporate Relations ~ 11/2013 to 1/2015

Thorough understanding of the philanthropic gift cycle: research, identification, cultivation, solicitation, and stewardship with a variety of donors including corporations, foundations, community non-profit organizations, and individuals. Supervised one full time employee (Assistant Director).

Program Management
Ran two corporate partners programs (37 partners combined) and two external leadership boards. Liaisoned with 70+ faculty in 5 colleges. Conducted major gift ($25K-$999K), and principal gift ($1M+) solicitations (programmatic, scholarship, and research foci) and executed stewardship events.

Funds Raised
Closed $1.6M in gifts including from AFCEA Bethesda, NSA, Booz Allen Hamilton, and AWS.

ENTREPRENEURSHIP

Parallel Films ~ Ireland
Showbands ~ Breakfast on Pluto
Assistant Script Supervisor ~ 7-9/2004

Supported on-set script duties for two independent Irish movies – *Showbands* (starring Liam Cunningham and Kerry Katona) and *Breakfast on Pluto* (starring Liam Neeson, Cillian Murphy, and Ruth Negga, directed by Neil Jordan) including camera notes for the editor, assuring script continuity with the actors and director, and scene detail observations.

Vij's Rangoli Production Facility/Café ~ Vancouver, British Columbia
Project Manager ~ 8/2002 to 3/2004

Researched, organized, and managed the development of grocery, ready-to-serve, East Indian curries.

"*Vij's is…easily among the finest Indian restaurants in the world*"
– Mark Bittman, New York Times, 8/8/2003

- Crystallized the business vision for a preservative-free product via extensive food science research and experimentation at the British Columbia Institute of Technology, Food Science Centre.
- Procured business incorporation status, maintained the working budget ($400K) and navigated food science regulations with the Canadian Food Inspection Agency.
- Liaison to the owners/chefs, builder, and designer on construction and build-out process.
- Opened this innovative business (20+ staff) with weekly gross revenues exceeding $15K.