

**INSTITUTIONAL BIOSAFETY COMMITTEE ROSTER August 2025**  
**Prairie Education and Research Cooperative**

775 Sunset Blvd.  
O'Fallon, IL 62269

Name/Affiliation	City, ST., Zip	Phone / Email
1 Sharon Judge PhD WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	(253) 466-0355 WCGIBCChairs@wcgclinical.com
2 Sarah Roberge MPH WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	(360) 570-1321 WCGIBCChairs@wcgclinical.com
3 ** R. Allen Helm PhD, RBP University of Chicago	Chicago IL 60637	(773) 834-6756 Ahelm@uchicago.edu
3 Tameece Knowles MS Florida International University	Miami FL 33199	786-942-5833 Ttknowles01@yahoo.com
4 Mark J. Campbell PhD, RBP, CBSP, CIC Independent Consultant	Imperial MO 63052	(314) 680-6063 Markj.campbell@outlook.com
4 Paul C Lega Southern Illinois University-Edwardsville	Edwardsville IL 62026	(314) 556-7950 Paulclega@gmail.com
5 Christopher Doyle PhD WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	(360) 570-1386 Cdoyle@wcgclinical.com
5 Karen McCulloch BS WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	360-252-2883 WCGIBCChairs@wcgclinical.com
5 Michael Armanious MHA WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	360-252-2850 Michael.Armanious@wcgclinical.com
5 Kandi Braxton MPH, BS WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	(360) 252-2529 KBraxton@wcgclinical.com
5 Shannon Carlson RN, MSN WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	(919)-287-6605 Scarlson@wcgclinical.com
5 Amy Michaud BS WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	(360)252-2841 Amichaud@wcgclinical.com
5 Sangeeta Raina PhD WCG IBC Services	5000 Centregreen Way, Suite 200 Cary NC 27513	855-818-2289 Sraina@wcgclinical.com
** Jenny Chambers Executive Director Prairie Education and Research Cooperative	800 E. Carpenter St. #62 Springfield, IL, 62769	217-492-9104 Jchambers@prairieresearch.com

++ Institutional contact only, not to be included on the roster

\*\* Biological Safety Expertise

\* Denotes IBC Site Visitor

- 1 Chair
- 2 Co-Chair
- 3 Primary Member
- 4 Primary Local Member
- 5 Alternate Member

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

<b>Sharon Judge, PhD</b> 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE IBC Chair		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Wheaton College, Norton, MA	BA	1995	Biology
University of Florida, Gainesville, FL	MS	2000	Exercise Physiology
University of Florida, Gainesville, FL	PhD	2004	Exercise Physiology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### **Professional Experience:**

**1995 - 1998**

Research Technician, Ergo Science Inc., Charlestown, MA

**1998 - 2004**

Graduate Research Assistant, University of Florida, Gainesville, FL

**2004 - 2006**

Postdoctoral Fellow, Boston University School of Medicine, Boston, MA

**2006 - 2009**

Senior Biological Scientist, University of Florida, Gainesville, FL

**2009 - 2011**

Assistant Biosafety Officer, University of Florida, Gainesville, FL

**2011 - 2015**

Associate Biosafety Officer, University of Florida, Gainesville, FL

**2015 - 2023**

Biosafety Officer, University of Florida, Gainesville, FL

**2023 - Present**

IBC Chair, WCG IBC Services, Cary, NC

### **Professional Organizations:**

2020 - Present, Member, ABSA International, 2020 – present

2015 - Present, Member, Southeastern Biological Safety Association (SEBSA)

2015 - 2020, Registered Biosafety Professional, ABSA International

### **Honors and Awards:**

1995, Graduated, Magna Cum Laude

2000, Inducted in Phi Kappa Phi National Honor Society

2000, Thesis of the Year, College of Health and Human Performance, University of Florida

2000, Leighton E. Cluff Award for Aging Research, Institute on Aging, University of Florida

2000 - 2001, Charles W. Lapradd Fellowship, University of Florida

2003, C.A. Boyd Graduate Scholarship, University of Florida

2002 - 2004, American Heart Association Pre-doctoral Fellowship, Florida-Puerto Rico Affiliate

2004 - 2006, NIH Postdoctoral Fellowship, Whitaker Cardiovascular Institute, Boston University

## Publications:

Glushakova, L.G., Judge, S., Cruz, A., Pourang, D., Mathews, C.E., & Stacpoole, P.W. (2011). Increased superoxide accumulation in pyruvate dehydrogenase complex deficient fibroblasts. *Molecular Genetics and Metabolism*, 104(3), 255-260.

Judge, S. & Leeuwenburgh, C. (2007). Cardiac mitochondrial bioenergetics, oxidative stress, and aging. *American Journal of Physiology – Cell Physiology*, 292(6), C1983-1992.

Deruisseau, K.C., Kavazis, A.N., Judge, S., Murlasits, Z., Deering, M.A., Quindry, J.C., Lee, Y., Falk, D.J., Leeuwenburgh, C., & Powers, S.K. (2006). Moderate caloric restriction increases diaphragmatic antioxidant enzyme mRNA, but not when combined with lifelong exercise. *Antioxidants and Redox Signaling*, 8(3-4), 539-547.

Seo, A.Y., Hofer, T., Sung, B., Judge, S., Chung, H.Y., & Leeuwenburgh, C. (2006). Hepatic oxidative stress during aging: effects of 8% long-term calorie restriction and lifelong exercise. *Antioxidants and Redox Signaling*, 8(3-4), 529-538.

Kalani, R., Judge, S., Carter, C., Pahor, M., & Leeuwenburgh, C. (2006). Effects of caloric restriction and exercise on age-related, chronic inflammation assessed by C-reactive protein and interleukin-6. *The Journal of Gerontology: Biological Sciences*, 61(3), 211-217.

Judge, S., Jang, Y.M., Smith, A., Selman, C., Phillips, T., Speakman, J.R., Hagen, T., & Leeuwenburgh, C. (2005). Exercise by lifelong voluntary wheel running reduces subsarcolemmal and interfibrillar mitochondrial hydrogen peroxide production in the heart. *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*, 289(6), R1564-R1572.

Rude, M.K., Duhaney, T.A., Kuster, G.M., Judge, S., Heo, J., Colucci, W.S., Siwik, D.A., & Sam, F. (2005). Aldosterone stimulates matrix metalloproteinases and reactive oxygen species in adult rat ventricular cardiomyocytes. *Hypertension*, 46(3), 555-561.

Judge, S., Jang, Y.M., Smith, A., Hagen, T., & Leeuwenburgh, C. (2005). Age-associated increases in oxidative stress and antioxidant enzyme activities in cardiac interfibrillar mitochondria: implications for the mitochondrial theory of aging. *The FASEB Journal*, 19(3) 419-421.

Judge, S., Judge, A., Grune, T., & Leeuwenburgh, C. (2004). Short-term CR decreases cardiac mitochondrial oxidant production but increases carbonyl content. *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*, 286(2), R254-R259.

Gredilla, R., Phaneuf, S., Selman, C., Kendaiah, S., Leeuwenburgh, C., & Barja, G. (2004). Short-term caloric restriction and sites of oxygen radical generation in kidney and skeletal muscle mitochondria. *Annals of the New York Academy of Sciences*, 1019, 333-342.

Selman, C., Gredilla, R., Phaneuf, S., Kendaiah, S., Barja, G., & Leeuwenburgh, C. (2003). Short-term caloric restriction and regulatory proteins of apoptosis in heart, skeletal muscle and kidney of Fischer 344 rats. *Biogerontology*, 4(3), 141-147.

Drew, B., Phaneuf, S., Dirks, A., Selman, C., Gredilla, R., Lezza, A., Barja, G., & Leeuwenburgh, C. (2003). Effects of aging and caloric restriction on mitochondrial energy production in gastrocnemius muscle and heart. *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*, 284(2), R474-R480.

Childs, A.C., Phaneuf, S.L., Dirks, A.J., Phillips, T., & Leeuwenburgh, C. (2002). Doxorubicin treatment *in vivo* causes cytochrome C release and cardiomyocyte apoptosis, as well as increased mitochondrial efficiency, superoxide dismutase activity, and Bcl-2:Bax ratio. *Cancer Research*, 62(16), 4592-4598.

Pollack, M., Phaneuf, S., Dirks, A., & Leeuwenburgh, C. (2002). The role of apoptosis in the normal aging brain, skeletal muscle, and heart. *Annals of the New York Academy of Sciences*, 959, 93-107.

Phaneuf, S., & Leeuwenburgh, C. (2002). Cytochrome c release from mitochondria in the aging heart: a possible mechanism for apoptosis with age. *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*, 282(2), R423-R430.

Phaneuf, S., & Leeuwenburgh, C. (2001). Apoptosis and exercise. *Medicine and Science in Sports and Exercise*, 33(3), 393-396.

Zhang, Y., Scislowski, P.W., Prevelige, R., Phaneuf, S., & Cincotta, A.H. (1999). Bromocriptine/SKF38393 treatment ameliorates dyslipidemia in ob/ob mice. *Metabolism*, 48(8), 1033-1040.

Scislowski, P.W., Tozzo, E., Zhang, Y., Phaneuf, S., Prevelige, R., & Cincotta, A.H. (1999). Biochemical mechanisms responsible for the attenuation of diabetic and obese conditions in ob/ob mice treated with dopaminergic agonists. *International Journal of Obesity and Related Metabolic Disorders*, 23(4), 425-431.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
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<b>Sarah E. Roberge</b> 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE IBC Chair		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Washington	MPH	2013	Public Health
University of Vermont	BS	2005	Biological Sciences

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### **Professional Experience:**

**2006 – 2007**

Lab Technician, New England Cryogenic Center, Newton, MA

**2007 – 2007**

Research Associate, Benaroya Research Institute, Seattle, WA

**2007 – 2013**

Cord Blood Technologist III, Bloodworks Northwest, Seattle, WA

**2013 – 2017**

Clinical Research Coordinator, Bloodworks Northwest, Seattle, WA

**2017 – 2019**

Project Coordinator, Seattle Cancer Care Alliance, Seattle, WA

**2019 – 2020**

Biosafety Analyst, IBC Services, Puyallup, WA

**2020 – Present**

IBC Chair, WCG IBC Services, Cary, NC

### **Publication:**

Ian B Nicoud, Dominic M Clarke, Greta Taber, Kristin M Stolowski, Sarah E Roberge, Melissa K Song, Amy J Mathew, Jo-Anna Reems. "Cryopreservation of Umbilical Cord Blood with a Novel Freezing Solution That Mimics Intracellular Ionic Composition." *Transfusion*, 2012 Sep.

McCulloch, K, Roberge, S: How Potential Changes to the NIH Guidelines Could Impact IBC Review: WCG Blog Post, November 2023.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

<b>R. Allen Helm, PhD, CBSP(ABSA)</b> 920 E. 58th Street, CLSC 145 Chicago, IL 60637 (773) 834-6756	<b>POSITION TITLE</b> Associate Director of Biosafety		
<b>EDUCATION/TRAINING</b> (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
<b>INSTITUTION AND LOCATION</b>	<b>DEGREE (if applicable)</b>	<b>YEAR(s)</b>	<b>FIELD OF STUDY</b>
University of Louisville, Louisville, Kentucky	BA	1993	Biology
University of Illinois, Urbana, IL	MS	2000	Microbiology
University of Illinois, Urbana, IL	PhD	2003	Microbiology

**RESEARCH AND PROFESSIONAL EXPERIENCE:** Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### **Professional Experience:**

**2009 - 2010**

GLRCE Biosafety Fellow, University of Chicago, Chicago, IL

**2010 - 2015**

Assistant Biosafety Officer, University of Chicago, Chicago, IL

**2015 - 2022**

Biosafety Officer, University of Chicago, Chicago, IL

**2022 - Present**

Associate Director of Biosafety, University of Chicago, Chicago, IL

### **Certifications:**

Registered Biological Safety Professional (ABSA International)

Certified Biological Safety Professional (ABSA International)

National Registry of Certified Microbiologists (American Society for Microbiology)

### **Honors and Awards:**

List of Teachers Ranked as Excellent by Their Students, University of Illinois, 1999

List of Teachers Ranked as Excellent by Their Students, University of Illinois, 2000

List of Teachers Ranked as Excellent by Their Students, University of Illinois, 2001

Francis Clark Award for Outstanding Microbiology Teaching Assistant, University of Illinois, 2002

Student Travel Grant Award, American Society for Microbiology General Meeting, Los Angeles, CA, 2000

Raymond Freese Memorial Postdoctoral Fellowship, 2003-2004

Travel Grant Award, International Pathogenic Neisseria Conference, Milwaukee, WI, 2004

National Institutes of Health NRSA Award F32 AI065091, 2006-2009

### **Professional Organizations:**

Member, American Society for Microbiology, 1999-present

Member, ABSA International, 2009 – present

Member, Midwest Area Biosafety Network, 2010 – present

### **Publications:**

1. Jortani, S. A., R. A. Helm, and R. Valdes, Jr. 1996. Inhibition of Na, K-ATPase by oleandrin and oleandrinogen and their detection by digoxin immunoassays. Clin. Chem. 42:1654-1658.

2. Jortani, S. A., J. J. Miller, R. A. Helm, N. A. Johnson, and R. Valdes, Jr. 1997. Suppression of immunoassay results by cross-reactivity. *J. of Clinical Ligand Assay*. 20:177-179.
3. Edwards, R.A., R.A. Helm, and S. R. Maloy. 1999. Increasing DNA transfer efficiency by temporary inactivation of host restriction. *Biotechniques* 26:892-894.
4. Helm, R. A. and S. Maloy. 2001. Rapid approach to determine *rrn* arrangement in *Salmonella* serovars. *Appl. Environ. Microbiol.* 67:3295-3298.
5. Helm, R. A., A. G. Lee, H. D. Christman, and S. Maloy. 2003. Genomic rearrangements at *rrn* operons in *Salmonella*. *Genetics*. 165:951-959.
6. Rabsch, W., R. A. Helm, and A. Eisenstark. 2004. Diversity of phage types among archived cultures of the Demerec collection of *Salmonella enterica* serovar Typhimurium strains. *Appl Environ. Microbiol.* 70:664-669.
7. Porwollik, S., R. M. Wong, R. A. Helm, K. K. Edwards, M. Calcutt, A. Eisenstark, and M. McClelland. 2004. DNA amplification and rearrangements in archival *Salmonella enterica* serovar Typhimurium LT2 cultures. *J. Bacteriol.* 186:1678-1682.
8. Helm, R. A., A. E. Stanley, S. Porwollik, S. Maloy, M. McClelland, W. Rabsch, and A. Eisenstark. 2004. Pigeon-associated strains of *Salmonella enterica* serovar Typhimurium phage type DT2 have genomic rearrangements at ribosomal RNA operons. *Infect. Immun.* 72:7338-7341.
9. Helm, R. A., M. M. Barnhart, and H. S. Seifert. 2007. *piQ* missense mutations have diverse effects on PilQ multimer formation, piliation, and pilus function in *Neisseria gonorrhoeae*. *J. Bacteriol.* 189: 3198-3207.
10. Erickson, M., D. Newman, R. A. Helm, A. Dino, M. Calcutt, W. French, and A. Eisenstark. 2009. Competition among isolates of *Salmonella enterica* sv Typhimurium: Role of prophage/phage in archived cultures. *FEMS Microbiol. Lett.* 294: 37-44
11. Helm, R. A. and H. S. Seifert. 2009. Pilin antigenic variation is not dependent upon the RecBCD pathway in *Neisseria gonorrhoeae*. *J. Bacteriol.* 191: 5613-5621
12. Helm, R. A. and H. S. Seifert. 2010. The rate and frequency of pilin antigenic variation in two strains of *Neisseria meningitidis*. *J. Bacteriol.* 192: 3822-23.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

Tamece Knowles 11555 SW 17th Street Miami, FL 33199 786-942-5833	POSITION TITLE Director of Environmental Health and Safety		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Florida Agricultural and Mechanical University, Tallahassee, FL	BS	1999	Animal Science
University of Florida, Gainesville, FL	MS	2002	Pathobiology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### ***Professional Experience:***

#### **2000 - 2000**

Biological Science Technician (Intern), USDA Agricultural Research Station, Brooksville, FL

#### **2002 - 2002**

Biosafety Level (BSL) II Lab Technician, University of Florida, Gainesville, FL

#### **2002 - 2005**

Biological Scientist I/Lab Manager, University of Florida, Gainesville, FL

#### **2005 - 2015**

Biosafety Officer, Florida International University, Miami, FL

#### **2015 - 2017**

Assistant Director/Biosafety Officer, Florida International University, Miami, FL

#### **2017 - 2019**

Assistant Director - Environmental Health & Safety, Florida International University, Miami, FL

#### **2017 - Present**

Clinical Institutional Biosafety Committee Non-Affiliated Member, Clinical Biosafety Services

#### **2019 - Present**

Director of Environmental Health and Safety, Florida International University, Miami, FL

### ***Certifications & Training***

Qualified Stormwater Management Inspector

### ***Publications***

Characterization of the Major Antigenic Protein 2 of Ehrlichia canis and E. chaffeensis and Its Application for the Serodiagnosis of Ehrlichiosis.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

<b>Mark J. Campbell, PhD, RBP, CBSP, CIC</b> Imperial, MO 63052 (314) 680-6063	<b>POSITION TITLE</b> Independent Consultant		
<b>EDUCATION/TRAINING</b> (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
<b>INSTITUTION AND LOCATION</b>	<b>DEGREE (if applicable)</b>	<b>YEAR(s)</b>	<b>FIELD OF STUDY</b>
St. Louis Community College at Meramec, St. Louis, MO	A.A.	1987	General Studies
Southeast Missouri State University, Cape Girardeau, MO	B.S.	1990	Biology
Southeast Missouri State University, Cape Girardeau, MO	M.S.	1994	Microbiology
Saint Louis University College for Public Health and Social Justice, St. Louis, MO	Ph.D.	2014	Environmental and Occupational Health

**RESEARCH AND PROFESSIONAL EXPERIENCE:** Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### **Professional Experience:**

**1990-1993**

Graduate Teaching Assistant, Southeast Missouri State University, Cape Girardeau, MO

**1991-1993**

Research Assistant, St. Francis Medical Center, Cape Girardeau, MO

**1993-1995**

Microbiologist, V.A. Medical Center, St. Louis, MO

**1995-1996**

Adjunct Instructor - Microbiology, St. Louis Community College at Meramec, St. Louis, MO

**1995-2003**

Research Scientist/Biological Safety Officer, Megan Health, Inc., St. Louis, MO

**2009-2010**

Adjunct Instructor, Saint Louis University School of Medicine & School of Public Health, St. Louis, MO

**2005-2022**

Assistant Professor (Adjunct), Department of Molecular Microbiology and Immunology, Saint Louis University, St. Louis, MO

**2001-2022**

Biological Safety Officer, Saint Louis University, St. Louis, MO

**2001-Present**

Independent Consultant, Specialist Microbiologist in Biosafety Microbiology

### **Certifications:**

2002-present, SM(NRCM): Specialist Microbiologist in Biological Safety Microbiology with the National Registry of Certified Microbiologists (NRCM).

2002-present, CBSP(ABSA): Certified Biological Safety Professional with the American Biological Safety Association (ABSA).

2004-present, RBP(ABSA): Registered Biological Safety Professional with the American Biological Safety Association (ABSA).

**Professional Organizations:**

2001-present, Member, American Biological Safety Association  
2002-present, Member, American Society for Microbiology  
2006-present, Founding Member and Former Counselor, Midwest Area Biosafety Network (MABION)  
2009-2010, Member, American Industrial Hygiene Association

**Publications:**

Gorse, G.J., **Campbell, M.J.**, Otto, E.E., Powers, D.C., Chambers, G.W., Newman, F.K. Influenza Vaccine in Elderly Nursing Home Residents. Abstract #H74 presented at the 35<sup>th</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy. San Francisco, CA, October 1994.

Gorse, G.J., **Campbell, M.J.**, Otto, E.E., Powers, D.C., Chambers, G.W., Newman, F.K., 1995. Increased Anti-Influenza A Virus Cytotoxic T-Cell Activity Following Live-Attenuated and Inactivated Influenza Virus Vaccination of the Chronically Ill Elderly. *J. of Infect. Dis.* 172: 1-10.

Roland, K., Curtiss III, R., Kane, S., **Campbell, M.J.** Construction and Characterization of a *Salmonella typhimurium* vaccine strain expressing *Escherichia coli* 078 lipopolysaccharide. Abstract #E85 presented at the 97<sup>th</sup> General Meeting of the American Society for Microbiology, Miami Beach, FL, May 1997.

Roland, K., Curtis III, R., Kane, S., Sizemore, D., **Campbell, M.J.** Efficacy of *Salmonella typhimurium* vaccine strains expressing *Escherichia coli* 078 lipopolysaccharide to protect against *E. coli* challenge in chickens. Abstract presented at CRWAD '97, Chicago, IL, November 1997.

Kelly, S.M., **Campbell, M.J.**, Pemberton, K., Roland, K., Curtiss III, R. Efficacy and safety of a live *Salmonella typhimurium* vaccine for young poultry. Abstract presented at CRWAD '97. Chicago, IL, November 1997.

Kelly, S.M., **Campbell, M.J.**, Pemberton, K., Roland, K., Curtiss III, R. Control of *Salmonella* in poultry. Abstract presented at the North Central Poultry Disease Conference, Des Moines, IA, October 12, 1997.

Kaniga, K., Compton, M.S., **Campbell, M.J.**, 1999. Regulation of *Salmonella* Virulence by Dominant Positive PhoP-DP Independent of PhoQ Sensor Kinase and Extracellular Signals. Submitted to the *J. of Bacteriology*.

Kaniga, K., Spears, M., **Campbell, M.J.**, Sizemore, D. Efficacy of Live Recombinant *Salmonella* Therapeutic Vaccine Against *Helicobacter pylori* Colonization in Mice Is Influenced By The Immune Responses Induced By The Attenuated Carrier. Abstract presented at the 12th European Congress of Clinical Microbiology and Infectious Diseases meeting in Milan, Italy, April 24, 2002.

**Campbell, M.J.**, 2015. Characterizing Accidents, Exposures, and Laboratory-acquired Infections Reported to the National Institutes of Health's Office of Biotechnology Activities (NIH/OBA) Division Under the NIH Guidelines for Work with Recombinant DNA Materials from 1976-2010. *Journal of Applied Biosafety*, Vol. 20, No. 1, 12-26.

Lewis, N., **Campbell, M.J.**, Baskin, C.R., 2015. Information Security for Compliance with Select Agent Regulations. *Health Security*, Vol. 13, No. 3, 207-218.

Buller, R.M., Connell, N.D., Morse, S.S., **Campbell, M.J.**, Tait, R.C. 2016. Baskin, C.R., and Zelicoff, A.P. (1<sup>st</sup> Ed.) Strengthening the role of the IBC in the 21<sup>st</sup> century. In Baskin, C.R., and Zelicoff, A.P. (1<sup>st</sup> ed.), *Ensuring National Biosecurity* (pp. 217-243). Waltham, MA. Academic Press.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

Paul C Lega 1 Hairpin Dr. Edwardsville, IL 62026 (314) 556-7950	Manager, Environmental Health & Safety		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Saint Louis University, St. Louis, Missouri	MS		Biology
Saint Louis University, St. Louis, Missouri	BA		Biology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### **Professional Experience:**

**2009 - 2014**

Veterinary Technician, Family Animal Hospital, Maryland Heights, MO

**2008 - 2017**

Senior Laboratory Assistant/Coordinator, Saint Louis University, St. Louis, MO

**2016 - 2017**

Brand Ambassador (Nestle Purina Pro Plan), Fusion Marketing, St. Louis, MO

**2017 - 2019**

Laboratory Supervisor, Lindenwood University, Belleville, IL

**2018 - 2021**

Brand Ambassador (Merrick), Fusion Marketing, St. Louis, MO

**2019 - 2022**

Scientific Materials Manager, McKendree University, Lebanon, IL

**2022 - Present**

Manager, Environmental Health & Safety, Southern Illinois University-Edwardsville, Edwardsville, IL

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

Christopher R. Doyle, Ph.D. 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE Senior Director, IBC Services		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
School of Medicine, Stony Brook University, Stony Brook, NY	Ph.D.	2014	Molecular Genetics and Microbiology
Assumption College, Worcester, MA	BA	2008	Biology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications.

### Professional Experience:

**2007 - 2008**

Research Assistant, University of Massachusetts Medical School, Worcester, MA

**2008 - 2014**

Graduate Research Assistant, Stony Brook University, Stony Brook, NY

**2014 - 2017**

Postdoctoral Research Fellow, Albert Einstein College of Medicine, Bronx, NY

**2018 - 2018**

Biosafety Analyst, IBC Services, WCG IRB, Puyallup, WA

**2018 - 2020**

IBC Chair, IBC Services, WCG IRB, Puyallup, WA

**2021 - 2023**

Director, IBC Services, WCG IRB, Puyallup, WA

**2023 - Present**

Senior Director, WCG IBC Services, Cary, NC

### Honors and Awards:

2022, CEO Award, WCG Clinical

2014-2017, T32 Research Fellowship, Geographic Medicine and Emerging Infections, NIAID, NIH (PI: Kami Kim)

2017, Best Poster Award, Shields Postdoctoral Research Symposium, Albert Einstein College of Medicine, Bronx, NY

2017, Selected Attendee, Spring School for RNA-seq Sequence Analysis, Mount Sinai School of Medicine, New York, NY

2013, Student Travel Award, Department of Molecular Genetics & Microbiology, Stony Brook University, Stony Brook, NY

2012, Outstanding Poster Award, Annual Retreat, Department of Molecular Genetics & Microbiology, Stony

Brook University, Stony Brook, NY

2011, ASM 2011 Young Investigator Oral Presenter Selection, General Meeting, American Society for Microbiology, New Orleans, LA

2011, Distinguished Travel Award, Graduate Student Organization, Stony Brook University

### Publications:

1. Babb R, Doyle CR, and Pirofski LA. Isolation and Characterization of Human Monoclonal Antibodies to Pneumococcal Capsular Polysaccharide 3. *Microbiology Spectrum* (2021). doi: 10.1128/Spectrum.01446-21 PMID 34756090.
2. Doyle CR. Exploring gene-based medicine's true potential. *Drug Discovery World* (2021). <https://www.ddw-online.com/exploring-gene-based-medicines-true-potential-12723-202108/>
3. Kopping EJ, Doyle CR\*, Sampath V, and Thanassi DG. Contributions of TolC orthologs to *Francisella tularensis* Schu S4 multidrug resistance, modulation of host cell responses, and virulence. *Infection and Immunity* (2019). doi:10.1128/IAI.00823-18. PMID 30670554. \*Co-first author
4. Doyle CR, Moon JY, Daily JP, Wang T, and Pirofski LA. A capsular polysaccharide-specific antibody alters *Streptococcus pneumoniae* gene expression during nasopharyngeal colonization of mice. *Infection and Immunity* (2018). doi:10.1128/IAI.00300-18. PMID 29735523.

5. Doyle CR and Pirofski LA. Reduction of *Streptococcus pneumoniae* colonization and dissemination by a non-opsonic capsular polysaccharide antibody. *mBio* (2016). doi: 10.1128/mBio.02260-15. PMID 26838726. (Editors' pick)
6. Doyle CR, Pan J, Mena P, Zong WX, and Thanassi DG. TolC-dependent modulation of host cell death by the *Francisella tularensis* Live Vaccine Strain. *Infection and Immunity* (2014). 82:2068-2078. PMID 24614652.
7. Ma Z, Mora VT, Rabadi SM, Rane H, Doyle CR, Banik S, Thanassi DG, Bakshi CS, and Malik M. The EmrA1 membrane fusion protein of *Francisella tularensis* LVS is required for resistance to oxidative stress, intramacrophage survival and virulence in mice. *Molecular Microbiology* (2014). 91(5):976-95. PMID: 24397487.

**Presentations:**

**Biosafety and Gene Therapy**

1. IBCs, IRBs, and Clinical Trial Oversight: The Future is Now | NWABR IBC Conference | 2023
2. The Biosafety and Regulatory Landscape of Gene-based Medicines | NWABR/SUBR Gene Therapy Webinar | 2022
3. Unique Considerations for Review of Gene Transfer Studies | WCG IRB Spring Training | 2022
4. Gene-Based Medicines: New Treatments for Old Problems | MAGI Clinical Research Conference | 2021
5. IBC Oversight of Human Gene Transfer Trials | Valley of the Sun SoCRA Summer Meeting | 2021
6. Strategies to Secure Rapid IBC Approval for Human Gene Transfer Trials | MAGI Clinical Research Conference | 2021
7. Human Gene Transfer Research | WCG IRB International Fellows Program | 2019 - 2020

**Laboratory Research**

1. Oligosaccharide specificities of mouse monoclonal antibodies and vaccine-elicited human immune sera to the *Streptococcus pneumoniae* serotype 3 capsule | Montefiore Medical Center Young Investigator Symposium | 2016
2. Whole genome sequencing and phenotypic analysis of serotype 3 *Streptococcus pneumoniae* from patients at Montefiore Medical Center, Bronx, NY | Dennis Shields Postdoctoral Research Symposium, Albert Einstein College of Medicine | 2016
3. Effects of capsular polysaccharide-specific antibodies on pneumococcal colonization and invasive disease in mice | American Society for Microbiology 115<sup>th</sup> General Meeting | 2015
4. Investigating the role of TolC and the type I secretion system in *Francisella tularensis* virulence | 7<sup>th</sup> International Conference on Tularemia | 2012
5. *Francisella tularensis* LVS inhibits caspase-3 activation during early stages of infection in a TolC-dependent manner | American Society for Microbiology 111<sup>th</sup> General Meeting | 2011
6. *Francisella tularensis* inhibits host immune responses in a TolC-dependent manner | American Society for Microbiology 110<sup>th</sup> General Meeting | 2010

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

Karen A. McCulloch, BS 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE Senior IBC Chair		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Michigan, Ann Arbor, MI	BS	1998	Microbiology
University of Michigan, Ann Arbor, MI	BS	1998	Anthropology/Zoology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications.

### **Professional Experience:**

#### **1998 - 2000**

Junior Scientist, University of Minnesota, Department of Laboratory Medicine and Pathology, Minneapolis, MN

#### **2000 - 2005**

Assistant Scientist, University of Minnesota, Department of Surgery, Minneapolis, MN

#### **2005 - 2012**

Scientist, University of Minnesota, Department of Surgery, Minneapolis, MN

#### **2013 - 2015**

Scientific Specialist, WCG Biosafety, Puyallup, WA

#### **2015 - 2018**

Biosafety Analyst, WCG Biosafety, Puyallup, WA

#### **2018 - 2025**

IBC Chair, WCG Biosafety, Puyallup, WA

#### **2025 - Present**

Senior IBC Chair, WCG IBC Services, Cary, NC

### **Abstracts:**

1. Wasiluk KR, Schowalter JP, Sorenson BS, Nelson R, Bulander RE, Banton KL, McCulloch KA and Saltzman DA: Attenuated *Salmonella typhimurium* Expressing Human Interleukin-2 Does Not Cause Apoptosis in Human Neuroblastoma Cells. Association for Academic Surgery, 2006.
2. K. L. Banton, S. J. Barnett, K. R. Wasiluk, B. S. Sorenson, K. A. McCulloch, D. A. Saltzman. Attenuated *Salmonella typhimurium* Containing Human IL-2 Gene has Local Effect on Murine Neuroblastoma: January, 2007, Scottsdale, AZ: American College of Surgeons Poster Presentation. Best Poster in Conference Award Winner.
3. Wasiluk KR, Frykman NL, Sorenson BS, Banton KL, Bulander RE, McCulloch KA, Saluja AK, Vickers SM, and Saltzman DA: Attenuated *Salmonella typhimurium* Expressing Human Interleukin-2 (IL-2) Invades Human Pancreatic Cancer Cell. Proceeding of the Society of University Surgeons and the Association for Academic Surgery, 2008.

### **Publications:**

1. De Larco JE, Wuertz BRK, Rosner, KA, Erickson SA, Gamache DA, Manival, JC, and Furcht LT: A Potential Role for Interleukin-8 in the Metastatic Phenotype of Breast Carcinoma Cells. American Journal of Pathology 158(2): 639-646, 2001.
2. Wasiluk, KR, McCulloch, KA, Banton, KL, and Dunn, DL: Sp1 Elements Regulate Transcriptional Activity with Murine Toll-like Receptor 4 Promoter. Surgical Infections 7(6): 489-499, 2006.
3. Sorenson B, Banton K, Augustin L, Barnett S, McCulloch K, Dorn J, Frykman N, Leonard A, and Saltzman D: Safety and immunogenicity of *Salmonella typhimurium* expressing C-terminal truncated human IL-2 in a murine model. Biologics: Targets & Therapy 4: 61-73, 2010.
4. McCulloch, K, Roberge, S: How Potential Changes to the NIH Guidelines Could Impact IBC Review: WCG Blog Post, November 2023.
5. K, McCulloch: WCG's Philosophy of Biosafety Review: WCG Blog Post, June 2024.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
Photocopy this page or follow this format for each person.

<b>Michael Armanious, MHA</b> 5000 Centregreen Way, Suite 200 Cary, NC 27513	<b>POSITION TITLE</b> IBC Biosafety Analyst		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Wisconsin Milwaukee, Milwaukee, WI	BS	2018	Biological Science
University of Wisconsin Milwaukee, Milwaukee, WI	MHA	2022	Healthcare Amin

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### **Professional Experience:**

**2018 - 2019**

Clinical Research Assistant III, Medical College of Wisconsin, Milwaukee, WI

**2021 - 2021**

Compliance Department Intern, Medical College of Wisconsin, Milwaukee, WI

**2019 - 2021**

Clinical Research Coordinator I, Medical College of Wisconsin, Milwaukee, WI

**2021 - 2022**

Clinical Research Coordinator II, Medical College of Wisconsin, Milwaukee, WI

**2022 - 2024**

Clinical Research Supervisor, Medical College of Wisconsin, Milwaukee, WI

**2023 - Present**

Teaching Assistant, University of Wisconsin Milwaukee, Milwaukee, WI

**2024 - Present**

IBC Biosafety Analyst, WCG IBC Services, Cary, NC

### **Honors and Awards:**

- Research Publication Department recognition - "Assessing the Healthcare Utilization of Youth Who Died by Suicide: A Case-Control Study."
- Excellence in undergraduate research
- Recipient of Excellence in mentoring award (2016 and 2017)
- Student Serving Students Award (May 2018)
- Peer Mentor and Peer Mentor Coach of the month awards (March 2018)
- Recipient of the Natural Science Minority Scholarship Award for Excellence in Science (2016-2017)

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
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Kandi Braxton, MPH, BS 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE IBC Biosafety Analyst		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
South College, Knoxville, TN	AS		Medical Assisting
Oregon Institute of Technology, Klamath Falls, OR	BS		Clinical Healthcare Management
South College, Knoxville, TN	MPH		Public Health

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### ***Professional Experience:***

**2003 - 2006**

Special Event Coordinator/Personal Assistant, All Occasions Party Rentals, Knoxville, TN

**2006 - 2007**

Certified Medical Assistant, Generations OB/GYN, Knoxville, TN

**2007 - 2010**

Medical Transcriptionist, Med Images, Inc., Knoxville, TN

**2011 - 2012**

Certified Medical Assistant, Women's Care Group, Knoxville, TN

**2012 - 2014**

Medical Transcriptionist, DTS, Inc., Oklahoma City, OK

**2014 - 2015**

Quality Assurance Specialist, DTS, Inc., Oklahoma City, OK

**2015 - 2016**

Business Operations Analyst, WCG Clinical, Princeton, NJ

**2016 - 2024**

IRB Operations Specialist, WCG Clinical, Princeton, NJ

**2024 - Present**

IBC Biosafety Analyst, WCG IBC Services, Cary, NC

### ***Licenses and Certifications:***

WIRB Trainings and Seminars, July/2015 - Present

Basic Life Support, May/2024 - Present

Bloodborne Pathogens Training, May 2024 - Present

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
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Shannon Carlson 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE IBC Biosafety Analyst		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of North Carolina, Chapel Hill, NC	MSN	1999	Master of Science, Nursing
University of North Carolina, Chapel Hill, NC	BSN	1994	Bachelor of Science, Nursing
Alamance Community College, Graham, NC	ADN	1986	Associate Degree, Nursing

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### ***Professional Experience:***

**1986 - 1989**

Oncology Clinical Nurse, UNC Hospitals, Chapel Hill, NC

**1989 - 1991**

Data Manager, UNC Hospitals, Chapel Hill, NC

**1989 - 1995**

Nurse Education Clinician & Oncology Clinical Nurse Supervisor II, UNC Hospitals, Chapel Hill, NC

**1995 - 1998**

Risk Management Specialist, UNC Hospitals, Chapel Hill, NC

**2013 - 2020**

Senior Safety Specialist/Reviewer, Copernicus Group Independent Review Board (CGIRB), Cary, NC

**2010 - Present**

IBC Biosafety Analyst, WCG IBC Services, Cary, NC

### ***Licenses and Certifications:***

NC Registered Nurse 1986-current

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
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Amy Michaud 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE IBC Biosafety Analyst Lead		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Connecticut, Storrs, CT	BS	2010	Molecular & Cellular Biology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### ***Professional Experience:***

**2013 - 2015**

Lab Manager, Assistant - Cardiovascular Medicine, University of Alabama at Birmingham, Birmingham AL

**2015 - 2019**

IRB Operations Specialist, WIRB, Puyallup WA

**2019 - 2019**

IRB Operations Lead, WIRB, Puyallup WA

**2019 - 2023**

Biosafety Analyst, IBC Services, WCG Clinical, Puyallup WA

**2023 - Present**

IBC Biosafety Analyst Lead, IBC Services, WCG IBC Services, Cary, NC

### ***Licenses and Certifications:***

Lean Six Sigma Green Belt Certification, completed August 2019

Lean Six Sigma Yellow Belt Certification, completed August 2017

ART Certification (Advanced Regulatory Training for IRB Professionals), completed August 2016

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.  
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Sangeeta Raina PhD 5000 Centregreen Way, Suite 200 Cary, NC 27513	POSITION TITLE IBC Biosafety Analyst		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Thomas Jefferson University, Philadelphia, USA	Graduate Certification	2006-2010	Clinical Research/Trials
Pune University, Pune, India	PhD	2003-2010	Microbiology
B.J. Medical College, Sassoon General Hospital, Pune, India	MSc	1997-2000	Medical Microbiology
Rayat Sikshan Waghire, Pune, India	BSc	1994-1997	Microbiology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### **Professional Experience:**

**2002 - 2003**

Research Associate, Department of Microbiology and Molecular Biology, Bangalore, India

**2004 - 2005**

Research Assistant, Department of Orthopedic, Thomas Jefferson University, Philadelphia, PA

**2005 - 2011**

Clinical Research Data manager, Thomas Jefferson University, Philadelphia, PA

**2011 - 2014**

Study Start Up Associate I, ICON Clinical Research, North Wales, PA

**2015 - 2020**

Expedited Reviewer, IRB Affairs, Western Institutional Review Board, Puyallup, WA

**2020 - Present**

IBC Biosafety Analyst, WCG IBC Services, Cary, NC