

Dr. Kristin R. Swanson
Department of Pathology
Department of Applied Mathematics
University of Washington
Seattle, WA, 98195

Dear Prof. Swanson:

I am writing to apply for the postdoc research position at the University of Washington in Seattle as advertised in SMB Digest Vol 11 and in your lab website. I obtained my Dr. rer. nat in Mathematics from the Institute for Mathematics and Scientific Computing, Karl-Franzens University of Graz, Austria in April 2010. My PhD thesis is entitled “*A Mathematical Model for the Cardiovascular System with a Measurable Pulsatile Pressure Output*” under the supervision of Em. Prof. Dr. Franz Kappel. In this project, we developed a global-lumped cardiovascular model where we can obtain pulsatile pressures measured in finger arteries. We also looked at the system dynamics and its transition from rest to exercise condition under a constant ergometric workload. Currently, I am a postdoc at the Institute of Molecular Life Sciences, University of Zurich, Switzerland. I am doing mathematical modeling of protein interactions. In particular, we are investigating the dynamics of the decay in protein dimerization and GAL signalling cascade.

On the course of my PhD studies, I had the opportunity to participate in multidisciplinary research activities such as in summer schools and conferences. Having this exposures, I realized the value of collaborative, interdisciplinary approach to understand complex biological systems in which Mathematics plays an integral role. I am confident in handling differential equations and dynamical systems in the context of modeling and simulations. Moreover, I am flexible, teachable and willing to go beyond my comfort zone and explore biological tools that would complement my theoretical background to aid in comprehending biological complexities such as brain tumour disease dynamics. With my background and qualifications, I suppose I can best fit in your group and contribute ideas to pursue your current research goals.

I am looking forward to hearing from you. If you do require any further information in support of my application, please do not hesitate to contact me by email at joel_dlr@yahoo.com and/or at au.delosreyes.05@gmail.com.

Yours sincerely,

Aurelio de los Reyes V

AURELIO ASUG DE LOS REYES V

CURRICULUM VITAE

Institute of Molecular Life Sciences
University of Zurich
Winterthurerstrasse 190
CH-8057 Zurich
Switzerland



email: joel_dlr@yahoo.com and/or au.delosreyes.05@gmail.com

Personal Data

Date of Birth: 21 December 1980
Place of Birth: Magarao, Camarines Sur, Philippines
Nationality: Filipino

Education

2007 - 2010: **Dr. rer. nat., Mathematics**
mit Auszeichnung bestanden (pass with distinction)
Karl-Franzens Universität Graz, Austria
(viva: 21 April 2010)

2001 - 2004: **M.S., Mathematics**
University of the Philippines Baguio, Philippines
(date graduated: 23 April 2004)

1997 - 2000: **B.S., Mathematics**
University of the Philippines Baguio, Philippines
(date graduated: 02 November 2000)

Awards

Feb. 2007 - Jan. 2010: **Technologiestipendien Südostasien (Doktorat),**
ÖAD Scholar, Austria

June 2002 - May 2004: **Commission on Higher Education (CHED)**
Faculty Development Project Scholar, Philippines

June 1997 - Nov. 2000: **Department of Science and Technology**
(DOST) Scholar, Philippines

Work Experience

<i>November 2010 - present:</i>	Postdoc Researcher Institute of Molecular Life Sciences University of Zurich, Switzerland
<i>June 2010 - present:</i>	Assistant Professor 4 (<i>on special detail</i>) Institute of Mathematics College of Science, University of the Philippines Diliman
<i>July 2005 - October 2006:</i>	Assistant Professor 1 Department of Mathematics and Computer Science College of Science, University of the Philippines Baguio
<i>June 2002 - June 2005:</i>	Instructor 1 Department of Mathematics and Computer Science College of Science, University of the Philippines Baguio
<i>June 2001 - May 2002:</i>	Teaching Associate Department of Mathematics and Computer Science College of Science, University of the Philippines Baguio
<i>January 2001 - May 2001:</i>	Part-time Tutor AHEAD Tutorial Center Katipunan Avenue, Quezon City, Philippines
<i>November 2000 - April 2001:</i>	Project Editor Diwa scholastic Press Mandaluyong City, Philippines

Travel Grants

- FEBS YTF Grant to attend the 5th **International Course in Yeast Systems** Biology to be held in Gothenburg, Sweden, June 6–23, 2011
- Landahl Travel Grant Award to attend the **2010 Annual Meeting of the Society of the Mathematical Biology** held in Rio de Janeiro, Brazil on July 26-29, 2010
- participation to **2009 Joint Meeting of the Korean Mathematical Society and the American Mathematical Society**, Ewha Womans University, Seoul, Korea, December 16-20, 2009 - funded by the Institute for Mathematics and Scientific Computing through its NAWI-GASS doctoral program travel grant fund
- participation to **FEPS 2009**, Ljubljana, Slovenia, November 12-15, 2009 - funded by the Institute for Mathematics and Scientific Computing through its NAWI-GASS doctoral program travel grant fund
- participation to Young Researchers in Mathematics Workshop, **MICOM 2009**, Ohrid, Macedonia, September 16-20, 2009 - travel cost was financed by the Institute for Mathematics and Scientific Computing through its NAWI-GASS doctoral program fund; accommodation and food expenses are covered by the Tempus Project on “SEE doctoral studies in Mathematical Sciences”

- full support for attendance (including registration, travel, accommodation, food, etc.) to Bio-Math Summer School and Workshop 2008, **Stochastic Differential Equation Models with Applications to the Insulin-Glucose System and Neuronal Modeling**, Middelfart, Denmark, August 3-16, 2008 - funded by *Marie Curie Conference and Training Courses Program*
- full support for attendance (including registration, travel, accommodation, food, etc.) to Summer School and Workshop Graz 2007, **Biomedical Modeling and Cardiovascular - Respiratory Control: Theory and Practice**, Schloss Seggau, Leibnitz, Austria, July 22 - August 4, 2007 - funded by *Marie Curie Conference and Training Courses Program*

Publications:

3. **A. de los Reyes V and F. Kappel**, *Stabilizing Control for a Pulsatile Cardiovascular Model*, (submitted to *BIOMAT series*)
2. **A. de los Reyes V and F. Kappel**, *Modeling Pulsatility in the Human Cardiovascular System*, *Mathematica Balkanica*, New Series Vol. 24, 2010, Fasc. 3-4, 229-242
1. **A. de los Reyes V and F. Kappel**, *A Mathematical Cardiovascular Model with Pulsatile and Non-Pulsatile Components*, SFB-Report No. 2010-011, March 2010, Institute for Mathematics and Scientific Computing, University of Graz, Austria
0. **A. de los Reyes V**, *A Mathematical Model for the Cardiovascular System with a Measurable Pulsatile Pressure Output*, PhD Thesis, submitted March 2010, Institute for Mathematics and Scientific Computing, University of Graz, Austria

Conference Abstracts

1. **A Mathematical Model for the Cardiovascular System Combining Pulsatile and Non-Pulsatile Components**, *2009 Joint Meeting of the Korean Mathematical Society and the American Mathematical Society*, December 16-20, 2009, Ewha Womans University, Seoul, Korea, Vol.46, No.3, pp. 352-353
2. **Predicting Pulsatile Variations in Finger Arterial Pressure Using a Novel Cardiovascular System Model**, *FEPS 2009*, 12 - 15 November, Ljubljana, Slovenia, Book of Abstracts, p.203

Membership in Professional Organizations

1. *member*, **Society for Mathematical Biology (SMB)** 2009 - present
2. *member*, **European Society for Mathematical and Theoretical Biology (ESMTB)** 2008 - present
3. *member*, **Swiss Society for Biochemistry (SSB)** May 2011 - present
4. *Secretary*, **Society for Industrial and Applied Mathematics (SIAM Student of Graz Chapter)** 2009

Research Interests

1. mathematical modeling in systems biology
2. mathematical modeling of human cardiovascular and respiratory system
3. predator-prey dynamics
4. control theory
5. stability analysis of differential equations

Presentations / Talks

International:

1. (*poster presentation*) ***Analysis of Feedback in GAL Signalling Cascade***, 8th **European Conference on Mathematical and Theoretical Biology and Annual Meeting of the Society for Mathematical Biology**, Krakow, Poland , June 28-July 2, 2011 (*in preparation*)
 2. (*contributed talk*) ***Stabilizing Control for a Pulsatile Cardiovascular Mathematical Model*** , **SMB 2010 Annual Meeting of the Society for Mathematical Biology**, Rio de Janeiro, Brazil, July 26-29, 2010
 3. (*invited speaker - MathBio session*) ***A Mathematical Model for the Cardiovascular System Combining Pulsatile and Non-Pulsatile Components***, **2009 Joint Meeting of the Korean Mathematical Society and the American Mathematical Society**, Ewha Womans University, Seoul, Korea, December 16-20, 2009
 4. (*oral presentation*) ***Predicting Pulsatile Variations in Finger Arterial Pressure Using a Novel Cardiovascular System Model***, **FEPS 2009**, Ljubljana, Slovenia, November 12-15, 2009
-

5. *(oral presentation)* **Modeling Pulsatility in the Human Cardiovascular System**, “SEE doctoral studies in Mathematical Sciences”- Tempus Project, Young Researchers in Mathematics Workshop, **MICOM 2009**, Ohrid, Macedonia, September 16-20, 2009

National/Local:

1. *(poster presentation)* **An Excursion to M.A.S.S. (Modeling, Analysis, Stability and Simulation) Towards Understanding GAL Signalling Network**, (Institute of Molecular Life Sciences) **IMLS Scientific Retreat**, Wildhaus, Toggenburg, January 13-15, 2011
2. *(resource speaker)* **The Mathematical Pulsatile Blood Flow and its Control Mechanisms**, **Breakthroughs in Mathematics XII**, University of the Philippines Baguio, Baguio City, September 18, 2010
3. *(oral presentation)* **Cardiovascular Dynamics during Rest and Exercise Conditions: A Modeling Approach**, **2010 Mathematical Society of the Philippines Convention**, Cebu City, Philippines, May 20-21, 2010
4. Lecture on **Visual Calculus**, Continuing Training Program Part IV (CTP 4), University of the Philippines Baguio, April 14-15, 2005
5. Lecture on **Basic Real Analysis**, Continuing Training Program Part III (CTP 3), Saint Mary’s University, Bayombong, Nueva Vizcaya, October 20-24, 2003

Conferences / Schools / Workshops Attended

International:

1. **SMB 2010 Annual Meeting of the Society for Mathematical Biology**, Rio de Janeiro, Brazil, July 26-29, 2010
 2. **2009 Joint Meeting of the Korean Mathematical Society and the American Mathematical Society**, Ewha Womans University, Seoul, Korea, December 16-20, 2009
 3. Federation of European Physiological Societies Meeting, **FEPS 2009**, Ljubljana, Slovenia, November 12-15 2009
 4. Mathematical Society of South-Eastern Europe (MASSEE) International Congress on Mathematics, **MICOM 2009**, Ohrid, Macedonia, September 16-20, 2009
 5. Bio-Math Summer School and Workshop 2008, **Stochastic Differential Equation Models with Applications to the Insulin-Glucose System and Neuronal Modeling**, Middelfart, Denmark, August 3-16, 2008
-

6. Summer School and Workshop Graz 2007, **Biomedical Modeling and Cardiovascular - Respiratory Control: Theory and Practice**, Schloss Seggau, Leibnitz, Austria, July 22 - August 4, 2007

National/Local:

1. (Institute of Molecular Life Sciences) **IMLS Scientific Retreat**, Wildhaus, Toggenburg, January 13-15, 2011
 2. Mathematical Society of the Philippines, **2010 Annual Convention**, Montebello Villa Hotel, Banilad, Cebu City, May 20-21, 2010
 3. **NAWI-Graz Workshop**, Seifenfabrik Veranstaltungszentrum, Angergasse 41-43, 8010 Graz, June 26, 2009
 4. Mathematical Society of the Philippines CAR-Region I Chapter, Seminar in Mathematics - Series VII, **Harnessing Research Potentials of Mathematics Teachers**, University of Northern Philippines, Vigan City, Ilocos Sur, January 28, 2006
 5. Mathematical Society of the Philippines, **2005 Annual Convention**, Ateneo de Naga University, Naga City, May 21-22, 2005
 6. Workshop in Applied Mathematics, **Shape Optimization and Free Boundary Value Problems** by Ao.Univ.-Prof. Dipl.-Ing. Dr.techn. Gunther Peichl and **Modeling in Physiology and Medicine** by O.Univ.-Prof. Dr.phil. Franz Kappel, University of the Philippines Diliman, Quezon City, February 14-18, 2005
 7. **2nd Symposium on Mathematical Aspects of Computer Science (SMACS)**, University of the Philippines Baguio, May 26-30, 2004
 8. Mathematical Society of the Philippines, **2004 Annual Convention**, Silliman University, Dumaguete City, May 22-23, 2004
 9. Mathematical Society of the Philippines, **2003 Annual Convention**, University of the Philippines Los Baños, Laguna, May 24-25, 2003
 10. Mathematical Society of the Philippines CAR-Region I Chapter, **Lectures on Financial Mathematics and Tertiary Mathematics Teaching**, Benguet State University, La Trinidad, Benguet, January 31, 2003
 11. Workshop on **Selected Topics in Partial Differential Equations**, Department of Mathematics, University of the Philippines Diliman, Quezon City, January 7-10, 2003
 12. Lecture on **“Financial Derivatives” (The Black-Scholes Option Pricing Formulas)** by Dr. Sergio S. Cao, University of the Philippines Baguio, Multi-Purpose Hall, January 24, 2002
-

References

- **Em. Univ.-Prof. Dr. Franz Kappel**
Institute for Mathematics and Scientific Computing
University of Graz
Heinrichstrasse 36, A 8010 Graz (AUSTRIA)
Tel.: +43 (0)316 380 5174, Fax: +43 (0)316 380 9815
franz.kappel@uni-graz.at

 - **a.o. Univ.-Prof. Mag. Dr. Stephen L. Keeling**
Institute for Mathematics and Scientific Computing
University of Graz
Heinrichstrasse 36, A 8010 Graz (AUSTRIA)
Tel.: +43 (0)316 380 5165, Fax: +43 (0)316 380 9827
stephen.keeling@uni-graz.at

 - **Dr. David M. Bortz**
Assistant Professor
Applied Mathematics
University of Colorado
Box 526, Boulder, CO 80309-0526
Tel.: (303) 492-7569
dmbortz@colorado.edu
-